

SDMS US EPA REGION V -1

**SOME IMAGES WITHIN THIS
DOCUMENT MAY BE ILLEGIBLE
DUE TO BAD SOURCE
DOCUMENTS.**

FIELD SAMPLING REPORT

**Soil, Ground Water, Surface Water,
Sediment, and Air Sampling
Field Sampling Report
Sauget Area 1 – Volume 5 of 9**

**Remediation Technology Group
Solutia Inc.
St. Louis, Missouri**

September 2000



**O'BRIEN & GERE
ENGINEERS, INC.**

Section 3.20

3.20. Sediment Sampling

Sediment samples were collected in Dead Creek to evaluate the extent of downstream migration of site-related constituents and to provide information for use in the HHRA (recreational teenage and recreational fishing scenarios) and the ecological risk assessment (endpoint organism exposure to sediments). The HHRA Work Plan is in Volume 1B of the SSP, and the Ecological Risk Assessment Work Plan is in Volume 1C. Sediment samples were collected at approximate upper, middle, and lower sections of each creek segment in Dead Creek to evaluate the extent of migration of site-related constituents. If continuous water was present in a creek segment, sediment samples were collected beginning at the most downgradient location and after collection of surface water samples.

Given the 17,000-foot length of Dead Creek, sediment sampling at 400-foot intervals would have provided sufficient information to evaluate the extent of downstream migration of industry-specific constituents. As directed by USEPA Region V, sediment samples were collected at approximately 200-foot intervals in the undeveloped portions of Dead Creek (i.e., Creek Segments B and F) and at approximately 150-foot intervals in the developed portions of Dead Creek, specifically Creek Segments C, D, and E, to evaluate the extent of migration of industry-specific constituents. A 150-foot sediment sampling interval was used in the 1991 Geraghty & Miller investigation of Creek Segment B; therefore, repeating sample collection at a 150-foot interval was not considered appropriate in this creek segment even though its southern end passes through a developed area. For this reason, sediment samples were collected at approximately 200-foot intervals in Creek Segment B to evaluate the extent of migration of industry-specific constituents.

A directed by USACE, sediment sampling locations to evaluate the extent of migration of industry-specific constituents in Creek Segments B, C, D, E, and the portion of Creek Segment F upstream of Borrow Pit Lake were adjusted in the field so that samples were obtained at the upstream and downstream ends of each road culvert at a specified radial distance from the culvert. Samples were collected within an approximate radial distance of 10 feet from the upstream and downstream end of each road culvert.

The extent of migration information collected as part of this task, coupled with sediment thickness measurements and channel cross-sectional area, will provide enough information to evaluate the volume of impacted sediments.

Sediment samples were not collected in Creek Segment A. This creek segment was used as a storm water detention basin which was dredged a number of times to remove accumulated sediment. Dredge spoil was placed on the creek banks and Site I. Cerro Copper performed an IEPA-

approved remedial action for Creek Segment A in 1990 and 1991. Approximately 20,000 cubic yards of impacted sediments were excavated from depths of 10 to 15 feet below grade and transported off site for disposal at the Waste Management landfill in Emelle, Alabama. After excavation, an HDPE vapor barrier was installed, and Creek Segment A was backfilled. The site is now fenced and used as a controlled-access truck parking lot. Since Creek Segment A was remediated under an agreement with IEPA, no further characterization was considered necessary.

3.20.1. Rationale/Design

Undeveloped Area Sediment Sampling – Vertically integrated sediment core samples were collected at approximately 200-foot intervals in Creek Segments B and F to evaluate the extent of downstream migration of constituents related to specific industrial sources located at the upstream end of Dead Creek (Figure 4). The combined length of these creek segments is approximately 10,000 feet. Industry-specific constituents include PCBs (discontinued chemical manufacturing operation), TPH (closed oil refinery), copper (active metal refining), and zinc (active metal refining). This information will also be used in the HHRA.

Samples were collected in depositional areas at the thickest sediment profile. Channel cross-section was surveyed at each sampling station, and sediment depth was measured at three locations perpendicular to the channel (channel center, halfway between channel center and right channel edge, and halfway between channel center and left channel edge).

Number of Sediment Samples	50
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Analyses:

Copper	USEPA Method 7211
Grain Size	Physical Method
PCBs	USEPA Method 680
Solids Content	USEPA Method SM2540G
TOC	USEPA Method 9060
TPH	USEPA Method 8015B
Zinc	USEPA Method 7951

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

Developed Area Sediment Sampling – Vertically integrated sediment core samples were collected at approximately 150-foot intervals in Creek Segments C, D, and E to evaluate the extent of downstream migration of constituents related to specific industrial sources located at the upstream end of Dead Creek (Figure 4). The combined length of these creek segments is approximately 7,000 feet. Industry-specific constituents include PCBs (discontinued chemical manufacturing operation), TPH

(closed oil refinery), copper (active metal refining), and zinc (active metal refining). This information will also be used in the HHRA.

Samples were collected in depositional areas at the thickest sediment profile. Channel cross-section was surveyed at each sampling station, and sediment depth was measured at three locations perpendicular to the channel (channel center, halfway between channel center and right channel edge, and halfway between channel center and left channel edge).

Number of Sediment Samples 47

Analyses:

Copper	USEPA Method 7211
Grain Size	Physical Method
PCBs	USEPA Method 680
Solids Content	USEPA Method SM2540G
TOC	USEPA Method 9060
TPH	USEPA Method 8015B
Zinc	USEPA Method 7951

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

Borrow Pit Lake Sediment Sampling – An approximately 200-foot sediment sampling interval was used for Dead Creek Segment F (which includes the southern portion of Borrow Pit Lake) to define downstream concentration distributions and gradients. Since roughly half of the 6,000-foot-long Borrow Pit Lake lies north of the point where Dead Creek discharges into it, two sediment sampling stations were considered adequate for the upstream portion of Borrow Pit Lake. Sampling at 200-foot intervals in the portion of Borrow Pit Lake north of the discharge of Dead Creek as requested by the USEPA Region V would have resulted in a total of 15 samples, which is more data than is needed to define the distribution of industrial source-specific constituents resulting from the discharge of Dead Creek into Borrow Pit Lake. A 400-foot sampling interval, a total of eight samples, in the northern half of Borrow Pit Lake will provide enough information to define the distribution of sediments resulting from the discharge of Dead Creek into Borrow Pit Lake.

Therefore, in order to evaluate the distribution of constituents related to specific industrial sources located at the upstream end of Dead Creek, vertically integrated sediment core samples were collected at 400-foot intervals from the upstream end of Borrow Pit Lake down to the confluence of Dead Creek with the lake (Figure 4). Industry-specific constituents include PCBs (discontinued chemical manufacturing operation), TPH (closed oil refinery), copper (active metal refining), and zinc (active metal refining). This information will also be used I the HHRA.

Samples were collected along the approximate center line of the lake. While sediment deposition is likely at the point where Dead Creek enters Borrow Pit Lake, sediment transport north of the confluence is expected to be limited by backwater depositional processes and stream flow into the north end of the lake.

Number of Sediment Samples 8

Analyses:

Copper	USEPA Method 7211
Grain Size	Physical Method
PCBs	USEPA Method 680
Solids Content	USEPA Method SM2540G
TOC	USEPA Method 9060
TPH	USEPA Method 8015B
Zinc	USEPA Method 7951

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

Old Prairie duPont Creek Sediment Sampling – Vertically integrated sediment core samples were collected to evaluate the extent of downstream migration of target compound list/target analyte list (TCL/TAL) constituents (Figure 4). These broad-scan analyses are also intended to provide information for the HHRA.

To evaluate the impact of the Dead Creek discharge on sediment quality in Old Prairie duPont Creek, one sample was collected upstream and one sample was collected downstream of the confluence of Dead Creek and Old Prairie duPont Creek.

The location of the upstream sample in Old Prairie duPont Creek was collected at an appropriate distance from the confluence with Dead Creek so that possible previous effects of flooding and flow reversals would not be likely to affect the collection of the background sample. As reported in the 1996 HRS package prepared by PRC Environmental Management, Inc. for USEPA Region V, a background sampling station was located 200 feet north (upstream) of the confluence of Dead Creek and Old Prairie duPont Creek. The sediment background sample was collected at this approximate location.

Samples were collected in depositional areas at the thickest sediment profile. Channel cross-section was surveyed at each sampling station, and sediment depth was measured at three locations perpendicular to the channel (channel center, halfway between channel center and right channel edge, and halfway between channel center and left channel edge).

Number of Sediment Samples 2

Analyses:

Cyanide	USEPA Method 9010B
Dioxin	USEPA Method 8290
Grain Size	Physical Method
Herbicides	USEPA Method 8151A
Mercury	USEPA Method 7471A
Metals	USEPA Method 6010B
PCBs	USEPA Method 680
Pesticides	USEPA Method 8081A
Solids Content	USEPA Method SM2540G
SVOCs	USEPA Method 8270C
TOC	USEPA Method 9060
VOCs	USEPA Method 5035/8260B

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

Dead Creek/Ecological Sediment Sampling – In support of the Ecological Assessment Sampling Plan, sediment samples were collected at the number of sampling stations indicated at each of the following locations:

- Creek Segment B – three sampling stations
- Creek Segment C – three sampling stations
- Creek Segment D – three sampling stations
- Creek Segment E – three sampling stations
- Creek Segment F, between Route 157 and Borrow Pit Lake – three sampling stations
- Borrow Pit Lake – three sampling stations
- Reference Area 1 – two sampling stations
- Reference Area 2 – two sampling stations
- Site M – one sampling station.

The sediment samples collected for the Ecological Assessment were also collected to evaluate the extent of downstream migration of TCL/TAL constituents (Figure 4). These broad-scan analyses are also intended to provide information for the HHRA and ecological risk assessment.

Each sediment sampling station coincides with the location where Menzie-Cura collected ecological samples for evaluation and were collected during the ecological sample collection activities. The three sampling stations within each of Creek Segments B, C, D, E, F, and Borrow Pit Lake were selected by Menzie-Cura because they exhibited the following characteristics:

- spatial coverage (stations at approximate upper, middle, and lower sections of the creek segment or stations north of, south of, and near the Dead Creek/Borrow Pit Lake confluence)
- depositional sediments as indicated by mud or fine sand

- at least a few inches of water to maximize the likelihood that aquatic invertebrate life existed.

The two sampling stations in each of Reference Area 1 and Reference Area 2 were selected by Menzie-Cura because they were physically comparable to those in the Dead Creek watershed (in order to provide a basis for comparison with Dead Creek and Borrow Pit Lake) and because they were located away from the direct influence of industrial discharges, including major highways. The exact locations were identified after the Ecological Assessment Site Reconnaissance Survey was performed. Additionally, one sampling station was selected at Site M.

Samples were collected from the biological active zone of the sediment. This zone is approximately within the top three inches of the sediment. VOC samples were collected using a five-gram EnCore™ sampler per USEPA Method 5035.

Number of Ecological Sediment Samples 23

Analyses:

Cyanide	USEPA Method 9010B
Dioxin	USEPA Method 8290
Grain Size	Physical Method (None for sample D-1)
Herbicides	USEPA Method 8151A
Mercury	USEPA Method 7471A
Metals	USEPA Method 6010B
PCBs	USEPA Method 680
Pesticides	USEPA Method 8081A
Solids Content	USEPA Method SM2540G
SVOCs	USEPA Method 8270C
TOC	USEPA Method 9060
VOCs	USEPA Method 5035/8260B

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

3.20.2. QA/QC Samples

QA/QC samples consisted of the following:

- one duplicate per 10, or fraction of 10, environmental samples collected
- one MS/MSD per 20, or fraction of 20, environmental samples collected or one MS/MSD every three working days, whichever was sooner

- one equipment blank (or field blank) per 10, or fraction of 10, environmental samples collected unless dedicated or disposable sampling equipment was used to collect samples
- one trip blank per sample cooler containing environmental samples for VOC analysis that was shipped.

QA/QC samples were submitted for analysis and analyzed for the same parameters as the investigative samples, as applicable. Duplicate samples were collected to measure consistency of field sampling technique. MS/MSD samples were collected to measure laboratory QC procedures. Equipment blanks were collected to measure the effectiveness of field decontamination procedures. Trip blanks were submitted to indicate cross-contamination of VOCs during shipment.

3.20.3. Field Procedures

Prior to performing field work, Preparatory Inspection Meetings attended by a representative of each of the interested parties were held (Section 3.20.4.2).

Undeveloped Area Sediment Sampling – Creek channel cross-sections were completed at sampling stations for volumetric calculation. Sediment samples were collected at the thickest part of the sediment profile, as identified by three sediment depths measured perpendicular to the channel. Sediment depths were measured by manually advancing clear plastic tubes into the sediment. In Creek Segment F, the depth of the first distinct sediment color change (e.g., light brown to gray, etc.) was considered to be the sediment depth. In subsequent locations, sediment depth was identified as the refusal depth of the sampling tube, manually advanced by the same individual (deviation log in Section 3.20.4.1).

Sediment samples were collected using a manual push-type sediment core sampler. The sampler consisted of a three-inch (nominal-diameter) polycarbonate sample tube and a "T" handle with check valve and extension rods. A sample tube was placed into the bottom of the "T" handle assembly and secured in place. The sampler was then pushed into the sediment until a refusal depth was reached. The refusal depth was recorded in the field notebook. The sampler was pulled up, creating a slight vacuum that closed the check valve. The tube was removed from the sampler, and the length of recovered sediment was recorded. The recovered length of sediment was collected from the tube into large sealable bags (e.g., Ziploc®) for compositing. The composited sediment was placed into the sample containers from the bag as soon as compositing was complete.

Where sediment or water depths required, extensions were added to the sample tube to facilitate collecting the sediment sample. In Dead Creek, a pick was used as necessary to break through ice or to loosen frozen

sediment prior to sample collection. Sample containers were placed on ice in coolers. Chain-of-custody procedures were followed. When all precleaned sampling equipment was used, they were decontaminated according to the procedures outlined in Section 3.7.3.

Developed Area Sediment Sampling – Field procedures for the collection of sediment samples for developed areas followed the procedures for sediment sample collection as outlined above for undeveloped area sediment sampling.

Borrow Pit Lake Sediment Sampling – Field procedures for the collection of sediment samples for Borrow Pit Lake followed the procedures for sediment sample collection as outlined above for undeveloped area sediment sampling. However, cross-sections and sediment depth measurements were not performed in Borrow Pit Lake.

Old Prairie duPont Creek Sediment Sampling – Sediment samples were collected using the same equipment and methods as outlined above for undeveloped area sediment sampling. VOC samples were collected using EnCore™ samplers per USEPA Method 5035.

Dead Creek/Ecological Sediment Sampling – Sediment samples were collected using a tall Ekman grab sampler or stainless-steel bowls and spoons (where standing water was not present). The Ekman grab sampler was either deployed over the side of a boat or by wading, depending upon the depth of the surface water body. If continuous water was present in a creek segment, sampling began at the furthest downstream sediment sampling station and proceeded upstream. It was the intent of the ecological sediment sampling to collect sediment samples from approximately zero to three inches below the sediment layer. Due to the volume of sediment required to perform the chemical analysis and the toxicity testing for the ecological assessment, multiple grab samples were collected at each sampling location.

The following procedures were followed for the collection of these sediment samples:

- Identify the sampling location and document it in the field log book.
- Position the boat stern at the sampling point and drop anchor from the bow. Should wading be employed for sample collection, sampler should be positioned upstream of the sample point if water is flowing.
- Pre-label sample containers.
- Don protective clothing
- Deploy grab sampler with open jaws slowly.

- When sampler feels the grab sampler has penetrated the bottom sediment, send the messenger down the grab sampler line to activate the closure mechanism of the jaw or trigger with a pole in shallow waters.
- Slowly retrieve the grab sampler by slowly pulling to the surface.
- When the grab sampler is visible, be ready with a bin to place the grab sampler in.
- Carefully decant excess water from the grab sampler.
- Measure the depth of the sediments in the grab sampler using a decontaminated ruler. There should be at least three inches of sediments in the grab sampler for collection of samples for evaluation.
- If enough sediment depth was obtained, first collect a sediment sample for VOC analysis from the grab sampler using an EnCore™ sampler. Follow the general EnCore™ sample collection procedures as discussed in Section 3.17.3.
- The remaining samples for chemical analysis and toxicity testing were obtained from subsequent homogenized grab samples collected at the same sampling point. Decontaminated stainless-steel spoons and bowls were used for homogenization.
- Place the homogenized samples into appropriate containers and complete the sample labels.
- Place the samples in a cooler on ice.
- Initiate chain-of-custody procedures for samples collected.
- After each sampling location or when all decontaminated sampling equipment has been used, decontaminate the sampling equipment according to the procedures outlined in Section 3.7.3.

3.20.4. Documentation

The deviation for the sediment sampling procedure is in Section 3.20.4.1. Field logs generated are in Record Book No. 5 (Appendix D). The sediment sampling interval length measured in the field for the Industry Specific samples are included in a hand written table provided in Section 3.20.4.2. Menzie-Cura maintained their own field log book (covering Dead Creek/ecological sediment sampling). Figure 4 depicts sample locations. The Thompson Engineering report for soil physical analysis is included in Section 3.20.4.3. Chain-of-custody forms are included in Section 3.20.4.4.

Documentation for this task continues on the next page.

3.20.4.1. Change Orders and Deviation/Clarification Log

DEVIATION LOG

INDIVIDUAL REQUESTING DEVIATION / COMPANY: DE Haverdink / O'Brien & Gere

DATE 10 JAN 2000

HEALTH & SAFETY APPROVAL REQUIRED: YES NO: X

PROJECT NAME Solutia - Saugat Area 1 PROJECT LOCATION Dear Creek

WEATHER PRECIPITATION TEMPERATURE

NUMBER OF HOURS WORKED NUMBER OF EMPLOYEES

- 1 CONTRACT ITEM BEING WORKED ON:
- 2 ITEM BEING DEVIATED (REF APPROP SEC OF FSP/HASP):
- 3 REASON FOR DEVIATION:
- 4 DEVIATION OR FIELD CHANGE TO BE IMPLEMENTED:
- 5 EQUIPMENT
- 6 DEVELOPMENTS WHICH MIGHT LEAD TO ISSUANCES OF A CHANGE ORDER OR BE THE BASIS OF A CLAIM (EQUIPMENT, TIME, MANPOWER, ETC.):
- 7 REMARKS:

- (1) Sediment sampling - vertically integrated core samples
- (2) Field procedures for sed. depth measurement and sample collection - FSP # 5.20.1
- (3) Field results to date preliminarily indicate the possibility for sediment to be deeper than the first observed color change and possibly greater than 12" thick
- (4) Sediment depths to be measured using the 3" diameter sampling tubes, manually advanced with the core sampler assembly by the same individual(s); sed. depth will be identified as the refusal depth of the manually-pushed tube; a sed. sample will be collected for analysis from the tube which was advanced into the sediment the greatest depth among the 3 sed. depth measurements at each location; the total recovered length will be composited for analysis from the sample tube; compositing will be performed manually using a large pre-cleaned sealed (e.g. Ziploc) bag; sample containers will be filled from the bag as soon as compositing is performed
- (5) Manual push-type sediment core sampler with check valve, extension rods, and 3" diameter poly carbon-R tube; predecor plastic bags.
- (6) Additional costs may be incurred for equipment - additional lengths of sampling tubes
- (7) Sed. depth measurements will not be re-performed in CS-F; sed. samples will be collected by manually pushing the sample tube to refusal and recording the refusal depth - sample tube will be pushed at the previously identified location of greatest sed. depth (CS-F only)

DE Haverdink / DE Haverdink
PRINTED NAME / SIGNATURE OF PREPARER

10 JAN 00

DATE

IF ADDITIONAL SPACE IS REQUIRED,
RECORD ON REVERSE SIDE

Gimber + Perry / Kirby 1/10/00
PRINTED NAME / SIGNATURE OF USEPA REP / DATE

PRINTED NAME / SIGNATURE OF USEPA REP / DATE

3.20.4.2. Preparatory Inspection Meeting Form

PREPARATORY INSPECTION MEETING

(Page 1/2)

Conducted by/Company: DE Haverdin / O'Brien + Gere Date: 21 DEC 99
 Project Name: Solutia - Saugatuck Area I Task: Sediment sampling - industry-specific

1. Scheduled Work: see below
2. Equipment, Procedures, Personnel: " "
- ③ Ref. To App. Sec. of FSP/HASP: FSP # 5.20.1-3 / HASP # 2.9
4. Issues that could arise and how to resolve: see below
5. Solutia comments: "
6. EPA comments: "

- ①
- Sediment sampling for industry-specific constituents in undeveloped & developed areas of Dead Creek and in Borrow Pit Lake; 105 sed. samples
 - Collect 50 sed. samples in CS-B & CS-F; ~ evenly spaced within each sub-segment; obtained within 10' of upstream & downstream end of each culvert (does not apply to CS-F downstream of Borrow Pit Lake)
 - Collect 47 sed. samples in CS-C, CS-D, & CS-E; ~ evenly spaced within each sub-segment; obtained within 10' of upstream & downstream end of each culvert
 - Collect 8 sed. samples in Borrow Pit Lake upstream of Dead Creek confluence; ~ evenly spaced at 400' intervals
 - Perform sed. depth measurements in channel at 3 locations at each collection interval; sample collected from 0-12" at the thickest sed. profile; sed. depth, color change used to ID sed. profile bottom; creek cross section surveyed at each sampling station; no sed. depths or cross sections done in Borrow Pit Lake
 - Borrow Pit Lake sampling collected along approx. centerline of lake
 -

ATTENDANCE:

EMPLOYEE NAME (print)	EMPLOYEE SIGNATURE	COMPANY
Erik Kasper	E. Kasper	RFG
Karen Perry	Karen Perry	Solutia
Ken Lafferty	Ken Lafferty	Marcilic

CC: K. Perry 21 DEC 99
 E. Kasper @1440

IF ADDITIONAL SPACE IS REQUIRED,
 RECORD ON REVERSE SIDE

DE Haverdin / O'Brien + Gere
 PRINTED NAME/SIGNATURE OF PREPARER
21 DEC 99

DATE

OBJECT: Preparatory Insp. Mtg. (continued)	PAGE: 22	BY: DEH	DATE: 12-21-89	JOB NUMBER: —
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Sediment sampling - industry-specific

- (2) Equipment: small-diameter clear tubes ^{manually} driven into sed. to 1D sed. profile + depth
 Procedures 3" diameter clear tubes manually driven to collect samples
 Waders, boat, ladder as needed to access sample locations
 Sample downstream-to-upstream as feasible; gross clean w/ water before exiting
 Personnel: sampling → OBG ; surveying → Zambrano
- (3) see page 1
- (4) Issues: • sed. depth less than 12" → collect additional volume to existing depth + record
- None
- (5) New OBG personnel (if applicable) to be briefed on the project + the area.
 Erik will need split samples at frequency of 1/10.

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
Creek Sediment Sampling - Ind. specific	11	DE7	29 DEC	

UNDEVELOPED AREAS

Creek Segment	Approx. length	# samplers	interval
B	1910'	10	212'
F ₁	330'	2	165'
F ₂	50'	2	50'
F ₃	580'	4	193'
F ₄	230'	2	230'
F ₅	6100'	28/29	226' 218'
F ₆	60'	170	-
		50	

O'BRIEN & GERE
COMPANIES

a/care

SUBJECT:	PAGE:	BY:	DATE:	JOB NUMBER:
Creek Sediment sampling - ind. specific	41	DET	10 DEC 97	

DEVELOPED AREAS

Creek Seg.	Aprox. length	# samples	interval
C	1520'	12	138'
D	340'	4	113'
D ₂	515'	5	129'
E	930'	8	113'
E ₂	1570'	13	113'
E ₃	580'	5	145'
		47	

PREPARATORY INSPECTION MEETING (Page 1/2)

Conducted by/Company: DE Haerdink / O'Brien + Gere Date: 04 FEB 00
 Project Name: Solutia - Saugat Area I Task: Sediment Sampling - broad scan

1. Scheduled Work:

see below

2. Equipment, Procedures, Personnel:

" "

③ Ref. To App. Sec. of FSP/HASP:

FSP # 5.20.4 / HASP # 2.9

4. Issues that could arise and how to resolve:

see below

5. Solutia comments:

" "

6. EPA comments:

" "

- ① · Sediment sampling for broad-scan analyses upstream and downstream of the confluence of Dead Creek and Old Prairie du Port Creek, in OPdPC
 · Collect 1 sample ~ 200' ^{upstream} of confluence and ~200' ^{downstream} of confluence for 2 total sediment samples
 · Perform sed. depth measurements to channel at 3 locations at each collection point; sample collected from ~~bottom~~ thickest sed. profile; removal of magnet/push ~~bottom~~ color sample used to ID bottom of sed.; channel cross-section surveyed at each samp. location

3" dia.

- ② · ~~3" dia.~~ clear tubes manually driven into sed. to 1D sed. ~~profile~~ depth;
 3" dia. clear tubes manually driven to collect samples; waders, boat, ladder as needed to access samp. locations; samp. ^{down} upstream before ~~up~~ stream as feasible; gross decon w/water before exiting
 · ODG samp. personnel + Zambrano surveying personnel

ATTENDANCE:

EMPLOYEE NAME (print)	EMPLOYEE SIGNATURE	COMPANY
Adam J. Kars,	<u>A.J. Kars</u>	OBG
Mike Reece	<u>Mike Reece</u>	OBG
CHAD KRISTOF	<u>Chad Kristof</u>	OBG
Karen J. Perry	<u>Karen J. Perry</u>	SDI-TIA

CC: K. Perry 04 FEB 00
 E. Kemper Q170

IF ADDITIONAL SPACE IS REQUIRED,
 RECORD ON REVERSE SIDE

DE Haerdink / DE Haerdink
 PRINTED NAME/SIGNATURE OF PREPARER
04 FEB 00
 DATE



JECT:

Prep. Insp. Mtg. (continued)

PAGE:
12BY:
DEHDATE:
04 FEB 00JOB NUMBER:
_____Sed. Sampling - broad scan

(3) see page 1

(4) Issues:

- Refusal due to non-sediment, obstructions, etc.

resolve by selecting an adjacent location and re-try; or use pick to break through obstruction

- insufficient volume for sample

resolve by pushing down to adjacent location to collect additional volume from same depth

(5) Solutia comments

Sample tubes decontaminated with Alconox scrub, portable water rinse, multiple rinses w/ DI water

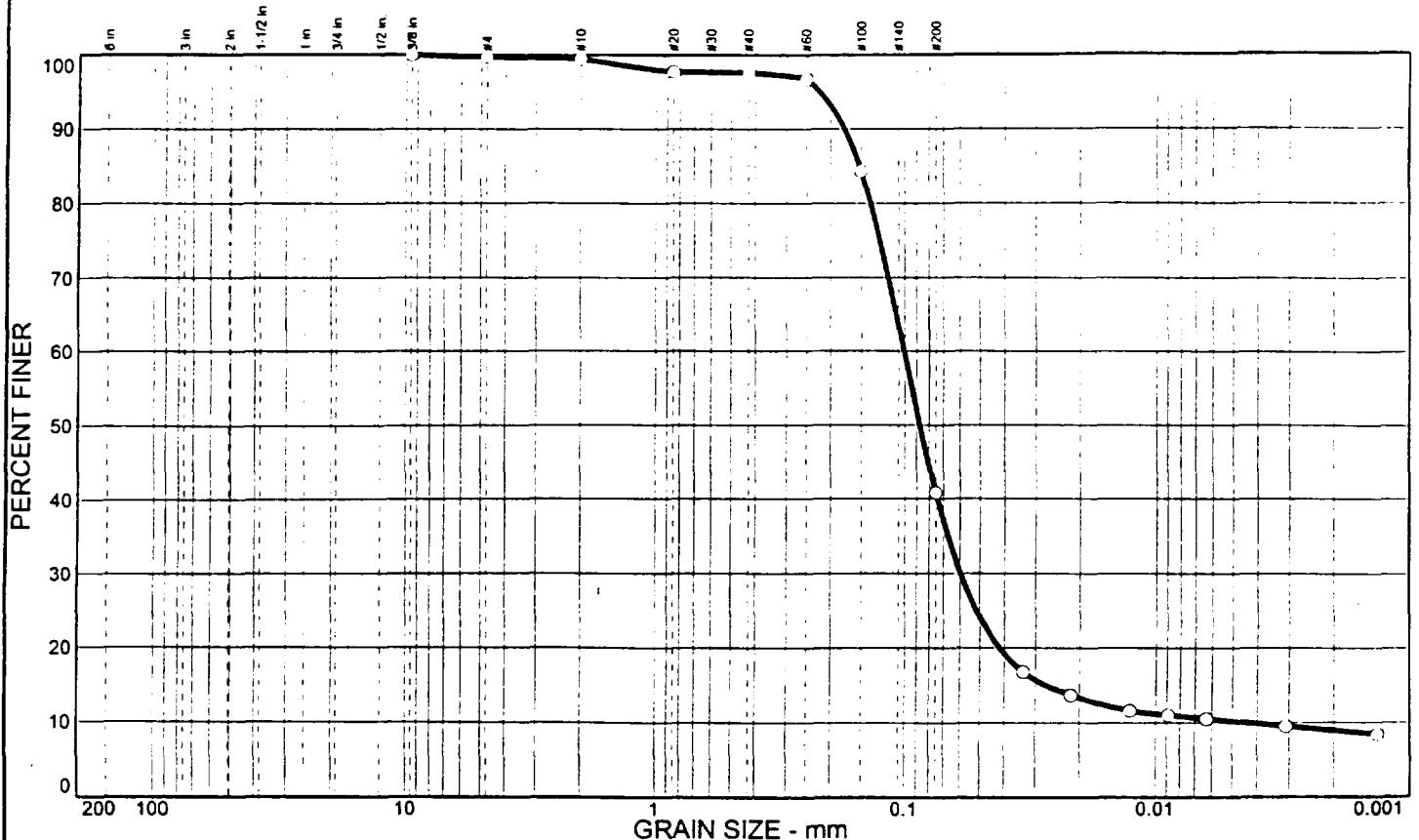
(6) EPA comments

none

Field Sampling Report, Saugat Area 1

3.20.4.3. Thompson Engineering Report

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.3	58.9	30.6	10.2	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	99.7			○ SILTY FINE SAND
<hr/>								
GRAIN SIZE								
D ₆₀	0.101			#10	99.5			
D ₃₀	0.0597			#20	97.7			
D ₁₀	0.0044			#40	97.6			
COEFFICIENTS								
C _c	8.00			#60	96.8			
C _u	22.77			#100	84.3			
				#200	40.8			
REMARKS:								
○								

○ Source: COC-2

Sample No.: FASED-BPL-S1-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-1

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-BPL-S1-0-10"
lev. or Depth:
ocation:
escription: SILTY FINE SAND
iquid Limit: - - -
GCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

by sample and tare= 143.07
ire = 0.00
by sample weight = 143.07
ample split on number 10 sieve
plit sample data:

Sample and tare = 94.67 Tare = .00 Sample weight = 94.67

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Leve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.39	99.7
# 10	0.69	99.5
# 20	1.69	97.7
# 40	1.82	97.6
# 60	2.56	96.8
# 100	14.42	84.3
# 200	55.82	40.8

Hydrometer Analysis Data

paration sieve is #10
recent -#10 based upon complete sample= 99.5
ight of hydrometer sample: 94.67
lculated biased weight= 95.15
ble of composite correction values:
Temp, deg C: 19.5 22.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.1	24.0	16.0	0.0135	24.0	12.4	0.0335	16.8
5.00	21.1	21.0	13.0	0.0135	21.0	12.9	0.0216	13.7
15.00	21.3	19.0	11.0	0.0134	19.0	13.2	0.0126	11.6
30.00	21.6	18.5	10.5	0.0134	18.5	13.3	0.0089	11.0
60.00	21.9	18.0	10.0	0.0133	18.0	13.3	0.0063	10.5
250.00	22.5	17.0	9.0	0.0132	17.0	13.5	0.0031	9.5
1440.00	19.2	16.0	8.0	0.0138	16.0	13.7	0.0013	8.4

Fractional Components

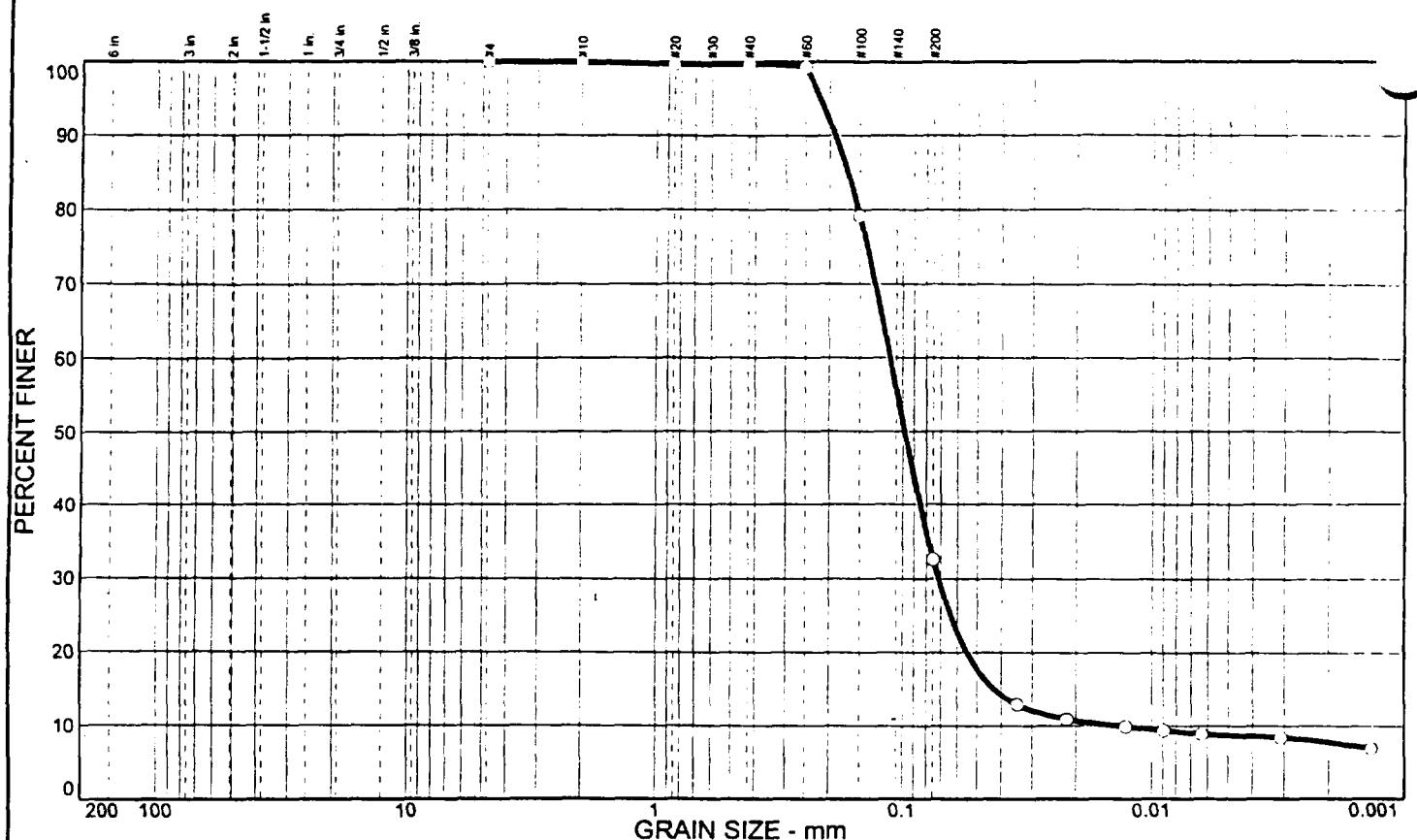
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.3 (% coarse = % fine = 0.3)
SAND = 58.9 (% coarse = 0.2 % medium = 1.9 % fine = 56.8)
SILT = 30.6 % CLAY = 10.2

35= 0.15 D60= 0.10 D50= 0.09
30= 0.06 D15= 0.03 D10= 0.00
c= 7.9965 Cu= 22.7747


MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



SIEVE inches size	PERCENT FINER		
	O		
GRAIN SIZE			
D ₆₀	0.112		
D ₃₀	0.0713		
D ₁₀	0.0136		
COEFFICIENTS			
C _c	3.34		
C _u	8.29		

SIEVE number size	PERCENT FINER		
	O		
#4	100.0		
#10	100.0		
#20	99.7		
#40	99.7		
#60	99.3		
#100	79.2		
#200	32.6		

SOIL DESCRIPTION

Q SILTY FINE SAND

REMARKS:

1

○ Source: COC-2

Sample No.: FASED-BPL-S2-0-10'

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-BPL-S2-0-10'
lev. or Depth:
ocation:
escription: SILTY FINE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 174.63
are = 0.00
ry sample weight = 174.63
mple split on number 10 sieve
plit sample data:

Sample and tare = 101.13 Tare = .00 Sample weight = 101.13

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.07	100.0
# 20	0.27	99.7
# 40	0.35	99.7
# 60	0.70	99.3
# 100	21.01	79.2
# 200	68.17	32.6

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 101.13
lculated biased weight= 101.13
ble of composite correction values:
Temp, deg C: 19.5 22.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.6	21.0	13.0	0.0135	21.0	12.9	0.0343	12.9
5.00	21.3	19.0	11.0	0.0134	19.0	13.2	0.0218	10.9
15.00	21.4	18.0	10.0	0.0134	18.0	13.3	0.0126	9.9
30.00	21.7	17.5	9.5	0.0134	17.5	13.4	0.0089	9.4
60.00	21.9	17.0	9.0	0.0133	17.0	13.5	0.0063	8.9
250.00	22.6	16.5	8.5	0.0132	16.5	13.6	0.0031	8.4
1440.00	19.2	15.0	7.0	0.0138	15.0	13.8	0.0014	6.9

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

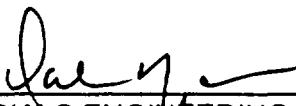
SAND = 67.4 (% coarse = 0.0 % medium = 0.3 % fine = 67.1)

SILT = 23.9 % CLAY = 8.7

D₅ = 0.17 D₆₀ = 0.11 D₅₀ = 0.10

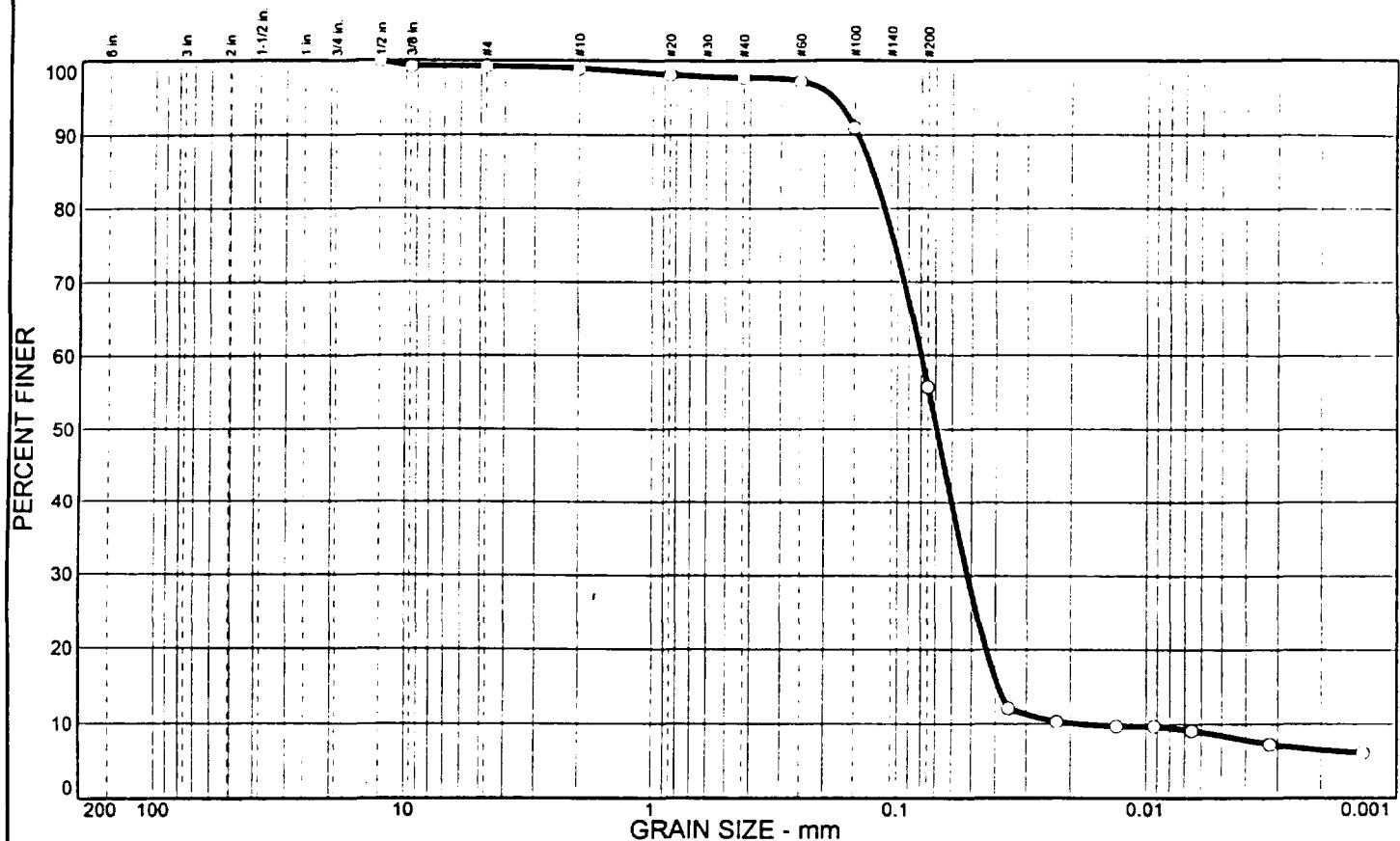
D₁₀ = 0.07 D₁₅ = 0.04 D₁₀ = 0.01

Cu = 3.34 C_u = 8.2944



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.8	43.5	47.3	8.4	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ FINE SANDY SILT					
	○				○								
.375	100.0 99.2			#4 #10 #20 #40 #60 #100 #200	99.2 98.9 98.1 97.7 97.2 91.0 55.7								
GRAIN SIZE													
D ₆₀	0.0799												
D ₃₀	0.0517												
D ₁₀	0.0186												
COEFFICIENTS													
C _c	1.80												
C _u	4.30												
REMARKS:													
○													

○ Source: COC-11

Sample No.: FASED-BPL-S3-0-8"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-7

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-11
Sample No.: FASED-BPL-S3-0-8"
Level or Depth:
Location:
Description: FINE SANDY SILT
Liquid Limit: - - -
CS Classification: - - -
AASHTO Classification: - - -
String Remarks:

Mechanical Analysis Data

Initial
Weight sample and tare= 85.83
Tare = 0.00
Weight sample weight = 85.83
Sample split on number 10 sieve
List sample data:
Sample and tare = 81.66 Tare = .00 Sample weight = 81.66
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.5 inch	0.00	100.0
.375 inch	0.65	99.2
# 4	0.66	99.2
# 10	0.91	98.9
# 20	0.66	98.1
# 40	0.97	97.7
# 60	1.44	97.2
# 100	6.49	91.0
# 200	35.66	55.7

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 98.9
Weight of hydrometer sample: 81.66
Calculated biased weight= 82.57
Table of composite correction values:
Temp, deg C: 19.0 21.0
Comp. corr: -8.0 -8.0

Discus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.7	18.0	10.0	0.0137	18.0	13.3	0.0354	12.1
5.00	19.6	16.5	8.5	0.0137	16.5	13.6	0.0226	10.3
15.00	19.7	16.0	8.0	0.0137	16.0	13.7	0.0131	9.7
30.00	19.7	16.0	8.0	0.0137	16.0	13.7	0.0092	9.7
60.00	20.1	15.5	7.5	0.0136	15.5	13.8	0.0065	9.1
250.00	20.6	14.0	6.0	0.0135	14.0	14.0	0.0032	7.3
1440.00	19.3	13.0	5.0	0.0138	13.0	14.2	0.0014	6.1

Fractional Components

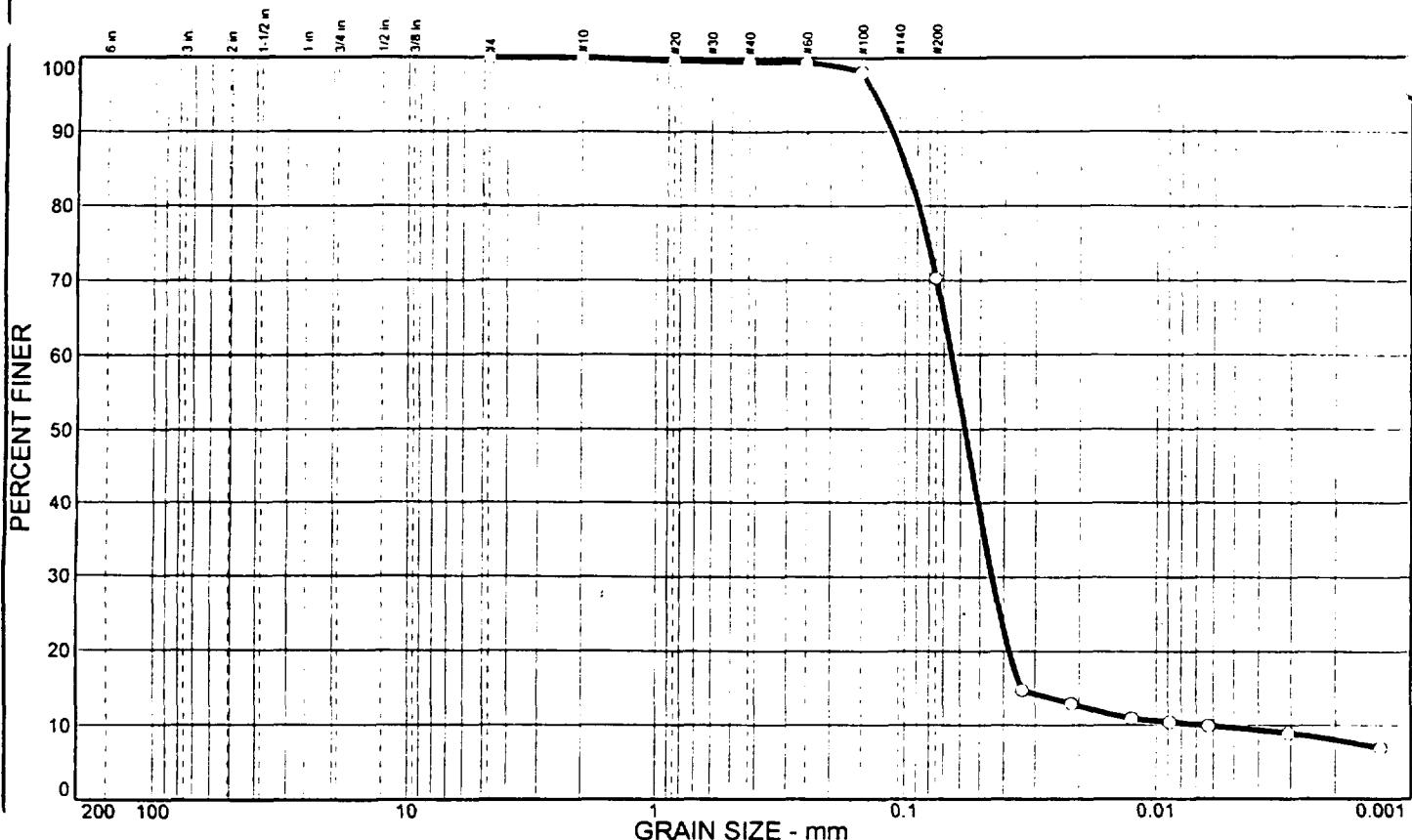
Gravel/Sand based on #4
Sand/Fines based on #200

COBBLES = % GRAVEL = 0.8 (% coarse = % fine = 0.8)
 SAND = 43.5 (% coarse = 0.3 % medium = 1.2 % fine = 42.0)
 SILT = 47.3 % CLAY = 8.4

$D_5 = 0.13$ $D_{60} = 0.08$ $D_{50} = 0.07$
 $D_0 = 0.05$ $D_{15} = 0.04$ $D_{10} = 0.02$
 $C_u = 1.8005$ $C_u = 4.3044$

Dalyc
 MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		29.7	60.7	9.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
○			
GRANULARITY			
D ₆₀	0.0651		
D ₃₀	0.0446		
D ₁₀	0.0067		
COEFFICIENTS			
C _c	4.56		
C _u	9.71		

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.6		
#40	99.5		
#60	99.4		
#100	98.1		
#200	70.3		

SOIL DESCRIPTION

○ SILT, WITH SAND

REMARKS:

○

○ Source: COC-2

Sample No.: FASED-BPL-S4-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-10

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-2

Sample No.: FASED-BPL-S4-0-10"

Level or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Weight sample and tare= 203.43

Tare = 0.00

Weight sample weight = 203.43

Sample split on number 10 sieve

Split sample data:

Sample and tare = 101.00 Tare = .00 Sample weight = 101.00

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent	
		retained	finer
# 4	0.00	100.0	
# 10	0.20	99.9	
# 20	0.32	99.6	
# 40	0.44	99.5	
# 60	0.50	99.4	
# 100	1.78	98.1	
# 200	29.96	70.3	

Hydrometer Analysis Data

Preparation sieve is #10

Percent -#10 based upon complete sample= 99.9

Weight of hydrometer sample: 101.00

Calculated biased weight= 101.10

Table of composite correction values:

Temp, deg C: 21.0 23.0

Comp. corr: -8.0 -8.0

Nuisance correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.4	23.0	15.0	0.0134	23.0	12.5	0.0336	14.8
5.00	21.4	21.0	13.0	0.0134	21.0	12.9	0.0215	12.9
15.00	21.7	19.0	11.0	0.0134	19.0	13.2	0.0125	10.9
30.00	21.9	18.5	10.5	0.0133	18.5	13.3	0.0089	10.4
60.00	22.2	18.0	10.0	0.0133	18.0	13.3	0.0063	9.9
250.00	22.9	17.0	9.0	0.0132	17.0	13.5	0.0031	8.9
1440.00	21.0	15.0	7.0	0.0135	15.0	13.8	0.0013	6.9

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

: COBBLES = % GRAVEL =

: SAND = 29.7 (% coarse = 0.1 % medium = 0.4 % fine = 29.2)

: SILT = 60.7 % CLAY = 9.6

: D₈₅ = 0.10 D₆₀ = 0.07 D₅₀ = 0.06

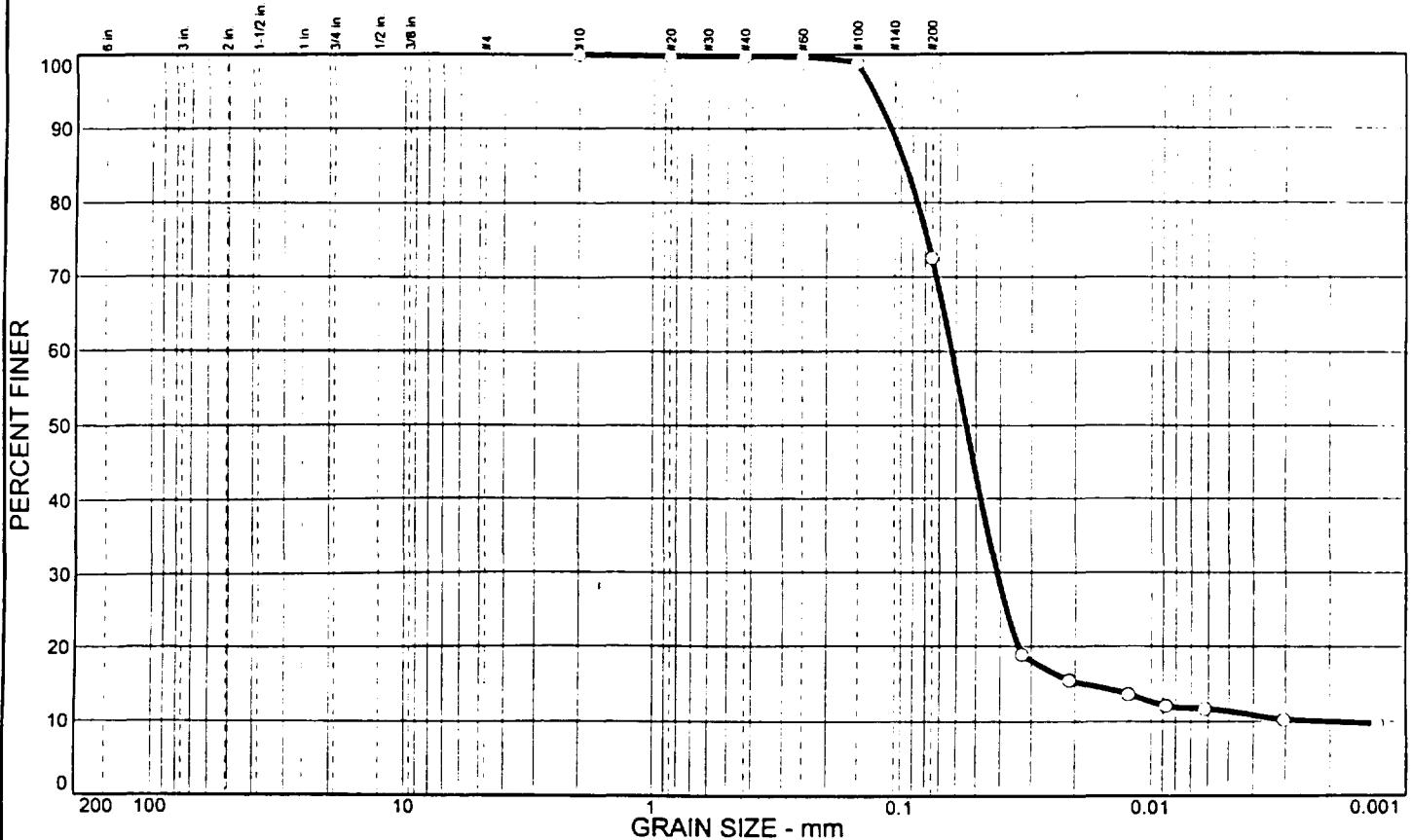
: D₃₀ = 0.04 D₁₅ = 0.03 D₁₀ = 0.01

: C_c = 4.5556 C_u = 9.706



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



SIEVE inches size	PERCENT FINER		
SIEVE number size	PERCENT FINER		
#10	100.0		
#20	99.8		
#40	99.8		
#60	99.7		
#100	98.9		
#200	72.5		

GRAIN SIZE			
D ₆₀	0.0624		
D ₃₀	0.0412		
D ₁₀	0.0022		

COEFFICIENTS			
C _c	12.57		
C _u	28.90		

SOIL DESCRIPTION			
○ SILT, WITH SAND			

REMARKS:			
○			

Source: COC-2

Sample No.: FASED-BPL-S5-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
mple No.: FASED-BPL-S5-0-9"
ev. or Depth: Sample Length (in./cm.):
cation:
scription: SILT, WITH SAND
quid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
sting Remarks:

Mechanical Analysis Data

Initial
y sample and tare= 160.67
re = 0.00
y sample weight = 160.67
mple split on number 10 sieve
lit sample data:
Sample and tare = 102.99 Tare = .00 Sample weight = 102.99
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.19	99.8
# 40	0.23	99.8
# 60	0.34	99.7
# 100	1.13	98.9
# 200	28.29	72.5

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 102.99
culated biased weight= 102.99
ole of composite correction values:
Temp, deg C: 21.0 23.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.3	27.5	19.5	0.0134	27.5	11.8	0.0326	18.9
5.00	21.3	24.0	16.0	0.0134	24.0	12.4	0.0211	15.5
15.00	21.5	22.0	14.0	0.0134	22.0	12.7	0.0123	13.6
30.00	21.8	20.5	12.5	0.0133	20.5	12.9	0.0088	12.1
60.00	22.2	20.0	12.0	0.0133	20.0	13.0	0.0062	11.7
250.00	22.9	18.5	10.5	0.0132	18.5	13.3	0.0030	10.2
1440.00	21.0	18.0	10.0	0.0135	18.0	13.3	0.0013	9.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 27.5 (% coarse = % medium = 0.2 % fine = 27.3)

SILT = 61.1 % CLAY = 11.4

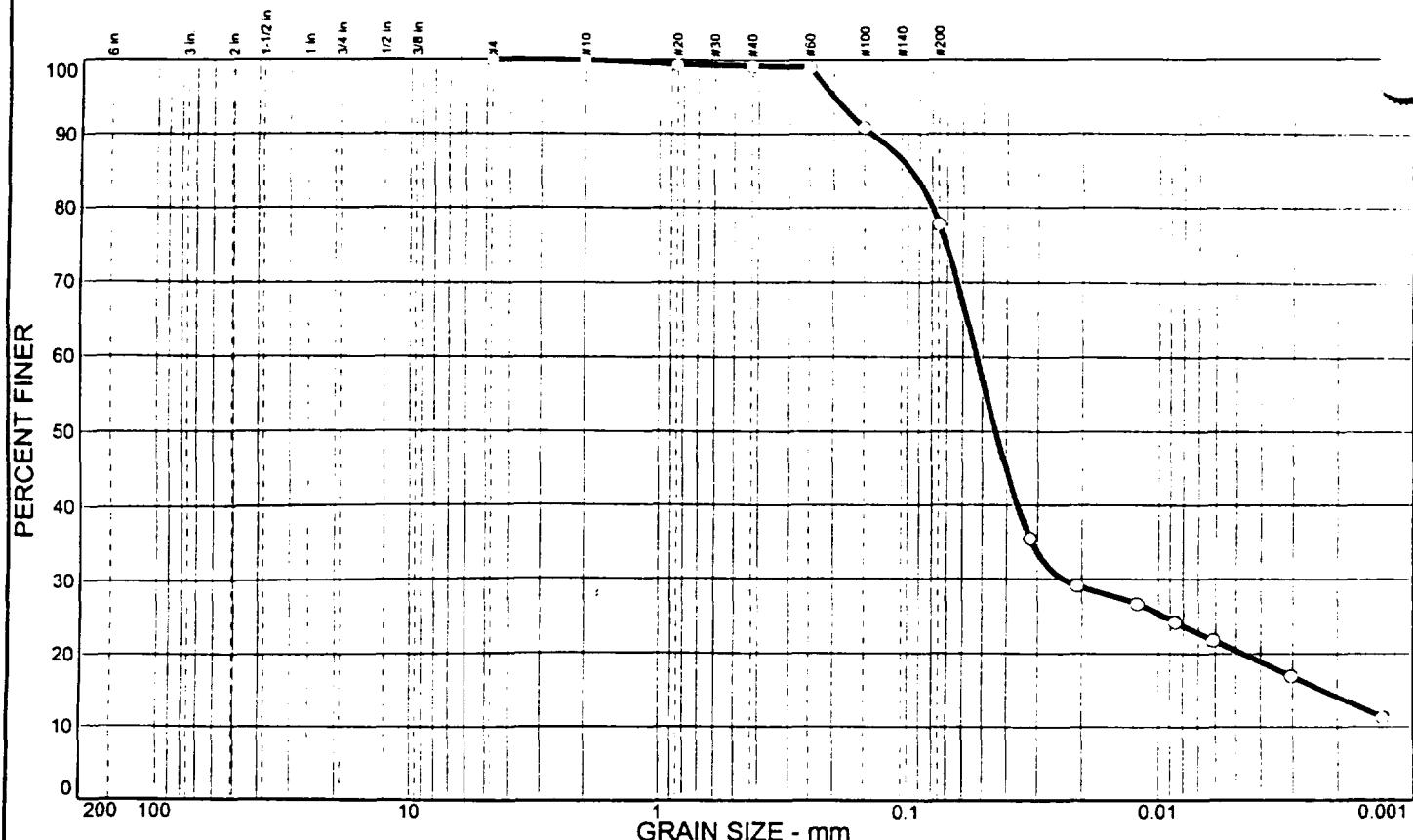
D₅= 0.10 D₆₀= 0.06 D₅₀= 0.05

D₁₀= 0.04 D₁₅= 0.02 D₁₀= 0.00

= 12.5737 C_u= 28.9009

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		22.2	57.4	20.4	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, WITH SAND
	○				○			
				#4	100.0			
				#10	99.9			
				#20	99.3			
				#40	99.2			
				#60	99.0			
				#100	90.8			
				#200	77.8			
<hr/>								
GRAIN SIZE								
D ₆₀	0.0527							
D ₃₀	0.0238							
D ₁₀								
<hr/>								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-2

Sample No.: FASED-BPL-S6-0-11'

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-15

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-2
Sample No.: FASED-BPL-S6-0-11'

Level or Depth:

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

SCS Classification: - - -

Testing Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Gross sample and tare = 142.58

Tare = 0.00

Gross sample weight = 142.58

Sample split on number 10 sieve

Split sample data:

Sample and tare = 61.87 Tare = .00 Sample weight = 61.87

Cumulative weight retained tare = .00

: for cumulative weight retained = .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.08	99.9
# 20	0.38	99.3
# 40	0.44	99.2
# 60	0.58	99.0
# 100	5.64	90.8
# 200	13.70	77.8

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.9

Weight of hydrometer sample: 61.87

Calculated biased weight= 61.93

Table of composite correction values:

Temp, deg C: 21.0 23.0

Comp. corr: -8.0 -8.0

Enniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.2	30.0	22.0	0.0134	30.0	11.4	0.0321	35.5
5.00	21.4	26.0	18.0	0.0134	26.0	12.0	0.0208	29.1
15.00	21.6	24.5	16.5	0.0134	24.5	12.3	0.0121	26.6
30.00	22.0	23.0	15.0	0.0133	23.0	12.5	0.0086	24.2
60.00	22.4	21.5	13.5	0.0132	21.5	12.8	0.0061	21.8
250.00	22.8	18.5	10.5	0.0132	18.5	13.3	0.0030	17.0
1440.00	21.0	15.0	7.0	0.0135	15.0	13.8	0.0013	11.3

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 22.2 (% coarse = 0.1 % medium = 0.7 % fine = 21.4)

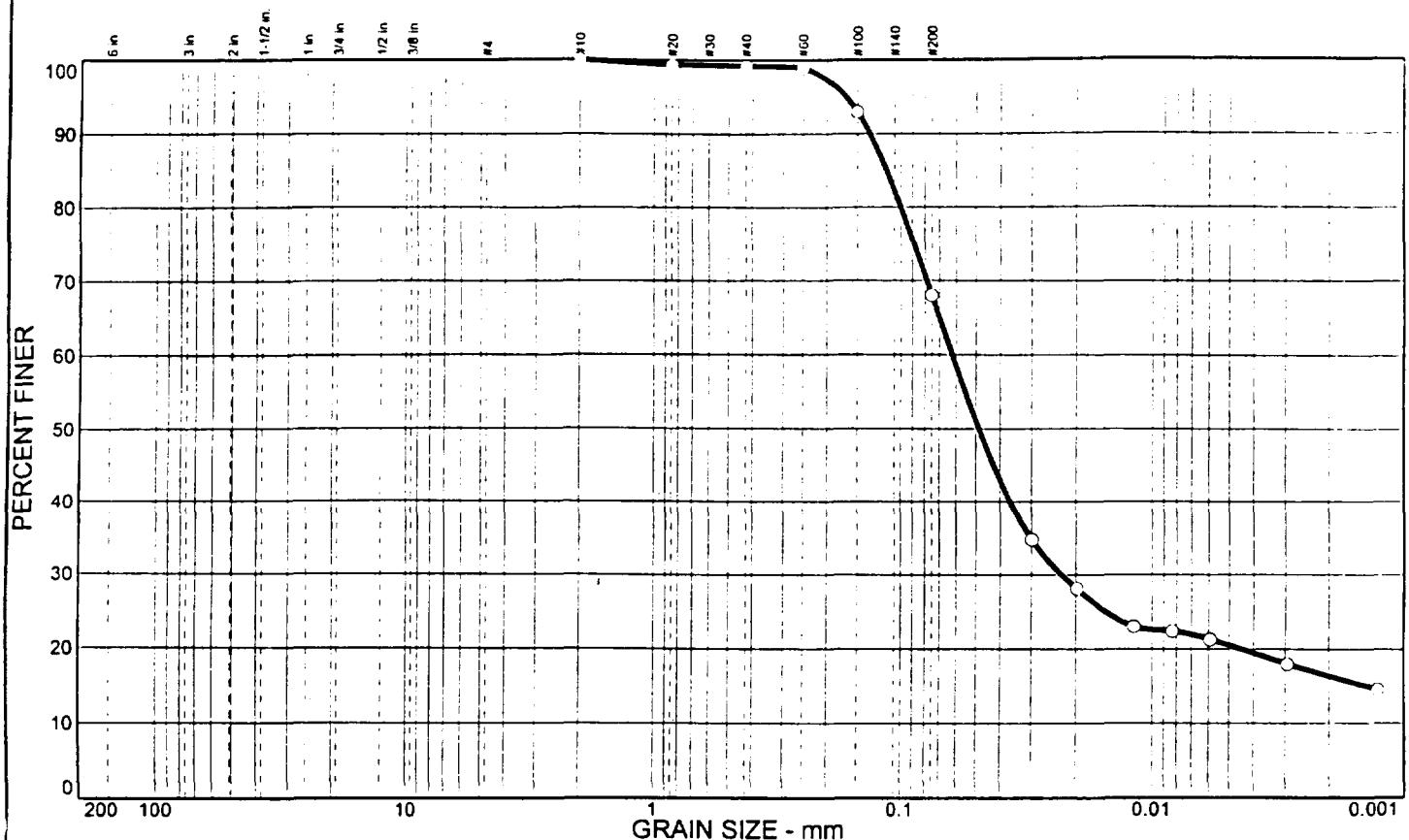
SILT = 57.4 % CLAY = 20.4

85= 0.10 D₆₀= 0.05 D₅₀= 0.04

30= 0.02 D₁₅= 0.00

Jae M
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		32.0	47.5	20.5	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
				#10	100.0			○ FINE SANDY SILT
				#20	99.3			
				#40	99.2			
				#60	99.0			
				#100	93.0			
				#200	68.0			
GRAIN SIZE								
D ₆₀	0.0622							
D ₃₀	0.0228							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-2

Sample No.: FASED-BPL-S7-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-18

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Object Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-BPL-S7-0-9"
lev. or Depth:
ocation:
escription: FINE SANDY SILT
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial
ry sample and tare= 163.27
are = 0.00
ry sample weight = 163.27
ample split on number 10 sieve
plit sample data:

Sample and tare = 89.11 Tare = .00 Sample weight = 89.11

Cumulative weight retained tare= .00

. for cumulative weight retained= .00

sieve	Cumul. Wt.	Percent finer
	retained	
# 10	0.00	100.0
# 20	0.65	99.3
# 40	0.70	99.2
# 60	0.91	99.0
# 100	6.24	93.0
# 200	28.54	68.0

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
eight of hydrometer sample: 89.11
alculated biased weight= 89.11
able of composite correction values:

Temp., deg C: 21.0 23.0

Comp. C8FF: -8.0 -8.0

Comp. 3312. 3.0 3.0

eniscus correction only =
specific gravity of solids =

specific gravity of solids = 2.65
specific gravity correction fact

specific gravity correction factor = 1.000
adjustment temp = 152W

ydrometer type: 152H

'ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.4	39.0	31.0	0.0134	39.0	9.9	0.0298	34.8
5.00	21.5	33.0	25.0	0.0134	33.0	10.9	0.0198	28.1
15.00	21.7	28.5	20.5	0.0134	28.5	11.6	0.0118	23.0
30.00	22.0	28.0	20.0	0.0133	28.0	11.7	0.0083	22.4
60.00	22.2	27.0	19.0	0.0133	27.0	11.9	0.0059	21.3
250.00	22.9	24.0	16.0	0.0132	24.0	12.4	0.0029	18.0
1440.00	21.1	21.0	13.0	0.0135	21.0	12.9	0.0013	14.6

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

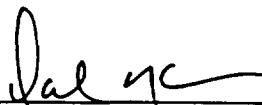
; COBBLES = % GRAVEL =

; SAND = 32.0 (% coarse = % medium = 0.8 % fine = 31.2)

; SILT = 47.5 % CLAY = 20.5

'85= 0.11 D60= 0.06 D50= 0.05

'30= 0.02 D15= 0.00

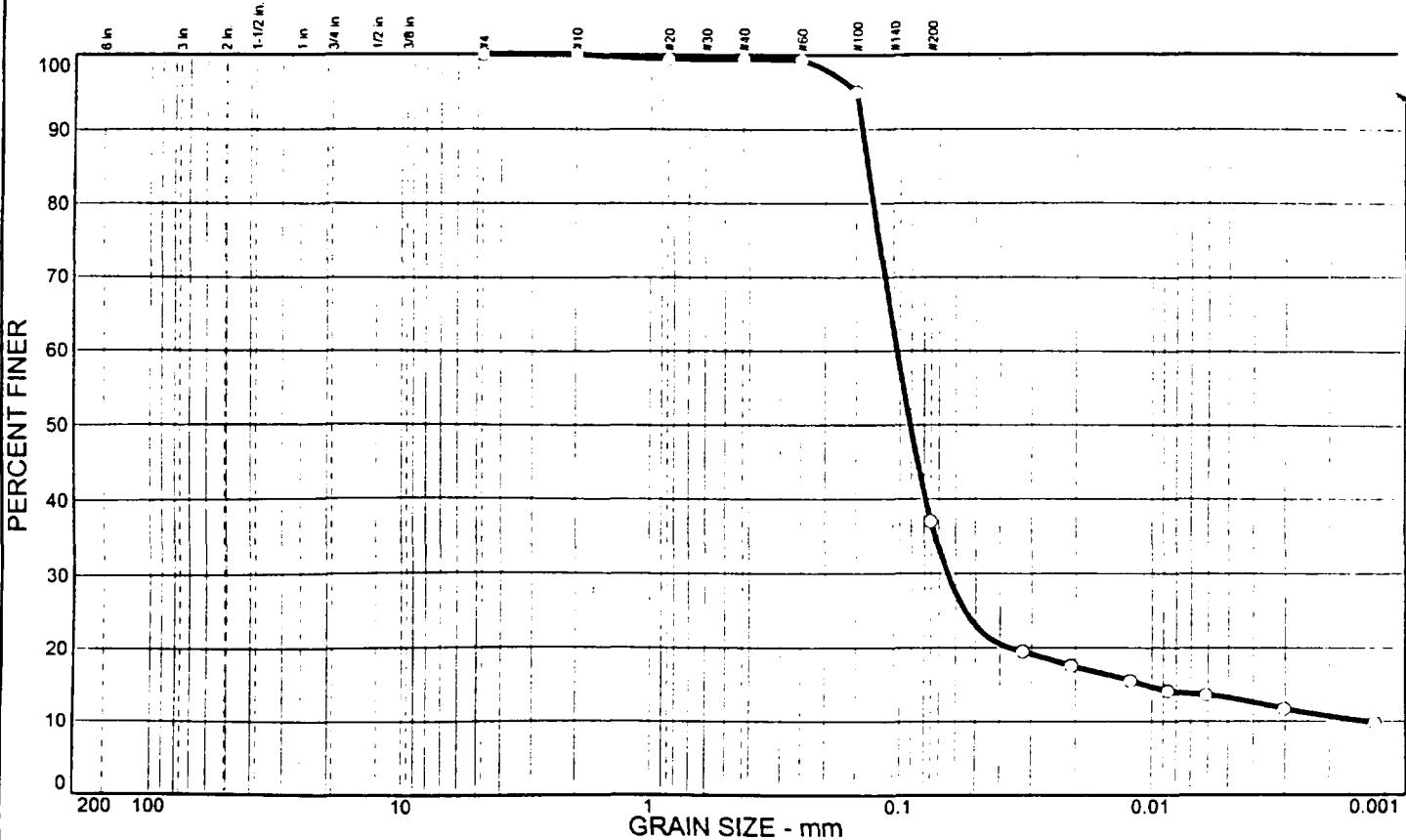


MATERIALS ENGINEERING LABORATORY

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Thompson Engineering

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		63.0	23.7	13.3	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILTY FINE SAND
	○				○			
				#4	100.0			
				#10	100.0			
				#20	99.4			
				#40	99.4			
				#60	99.3			
				#100	95.0			
				#200	37.0			
<hr/>								
GRAIN SIZE								
D ₆₀	0.103							
D ₃₀	0.0646							
D ₁₀	0.0015							
<hr/>								
COEFFICIENTS								
C _c	27.64							
C _u	70.01							

○ Source: COC-2

Sample No.: FASED-BPL-S8-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-21

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-BPL-S8-0-9"
lev. or Depth:
ocation:
escription: SILTY FINE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 154.85
are = 0.00
ry sample weight = 154.85
ample split on number 10 sieve
plit sample data:

Sample and tare = 102.39 Tare = .00 Sample weight = 102.39

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.07	100.0
# 20	0.58	99.4
# 40	0.59	99.4
# 60	0.71	99.3
# 100	5.09	95.0
# 200	64.48	37.0

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
eight of hydrometer sample: 102.39
alculated biased weight= 102.39
able of composite correction values:

Temp, deg C: 19.5 22.5
Comp. corr: -8.0 -8.0

aniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
-ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.4	28.0	20.0	0.0134	28.0	11.7	0.0324	19.5
5.00	21.4	26.0	18.0	0.0134	26.0	12.0	0.0208	17.6
15.00	21.6	24.0	16.0	0.0134	24.0	12.4	0.0121	15.6
30.00	22.0	22.5	14.5	0.0133	22.5	12.6	0.0086	14.2
60.00	22.2	22.0	14.0	0.0133	22.0	12.7	0.0061	13.7
250.00	22.7	20.0	12.0	0.0132	20.0	13.0	0.0030	11.7
1440.00	19.2	18.0	10.0	0.0138	18.0	13.3	0.0013	9.8

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 63.0 (% coarse = 0.0 % medium = 0.6 % fine = 62.4)

SILT = 23.7 % CLAY = 13.3

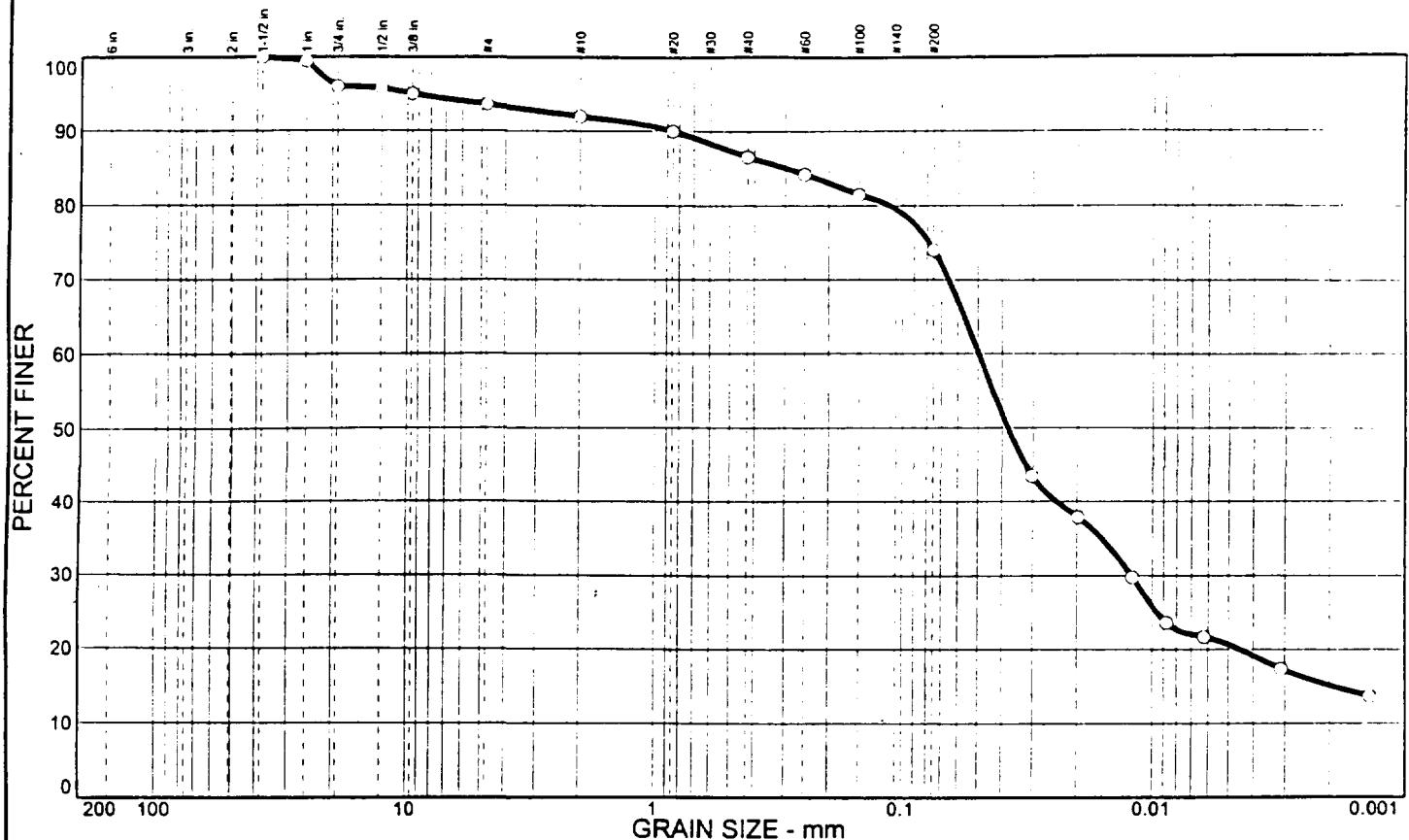
85= 0.14 D₆₀= 0.10 D₅₀= 0.09

30= 0.06 D₁₅= 0.01 D₁₀= 0.00

c= 27.6406 C_u= 70.013

Jae N C
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	6.4	19.6	53.3	20.7	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
1.5	100.0		
1	99.5		
.75	96.0		
.5	95.8		
.375	95.0		

GRAIN SIZE			
D ₆₀	0.0495	D ₃₀	0.0121
D ₁₀			

COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	93.6		
#10	92.0		
#20	90.0		
#40	86.6		
#60	84.2		
#100	81.5		
#200	74.0		

SOIL DESCRIPTION
○ SILT, WITH SAND

REMARKS:
○

Source: COC-3

Sample No.: FASED-CSB-S1W-0-25"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-24

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-3
ample No.: FASED-CSB-S1W-0-25"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 245.11
are = 0.00
ry sample weight = 245.11
ample split on number 10 sieve
plit sample data:

Sample and tare = 74.04 Tare = .00 Sample weight = 74.04

Cumulative weight retained tare= .00
for cumulative weight retained= .00

sieve	Cumul. Wt.		Percent finer
	retained		
1.5 inch	0.00		100.0
1 inch	1.27		99.5
.75 inch	9.90		96.0
.5 inch	10.31		95.8
.375 inch	12.27		95.0
# 4	15.69		93.6
# 10	19.69		92.0
# 20	1.64		90.0
# 40	4.34		86.6
# 60	6.27		84.2
# 100	8.48		81.5
# 200	14.53		74.0

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 92.0
ight of hydrometer sample: 74.04
lculated biased weight= 80.48
able of composite correction values:
Temp, deg C: 15.5 19.5
mp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H

267A-25

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.0	43.0	35.0	0.0140	43.0	9.2	0.0301	43.5
5.00	18.1	38.5	30.5	0.0140	38.5	10.0	0.0197	37.9
15.00	18.2	32.0	24.0	0.0140	32.0	11.0	0.0120	29.8
30.00	18.5	27.0	19.0	0.0139	27.0	11.9	0.0087	23.6
60.00	19.0	25.5	17.5	0.0138	25.5	12.1	0.0062	21.7
250.00	19.5	22.0	14.0	0.0137	22.0	12.7	0.0031	17.4
1440.00	15.4	19.0	11.0	0.0145	19.0	13.2	0.0014	13.7

Fractional Components

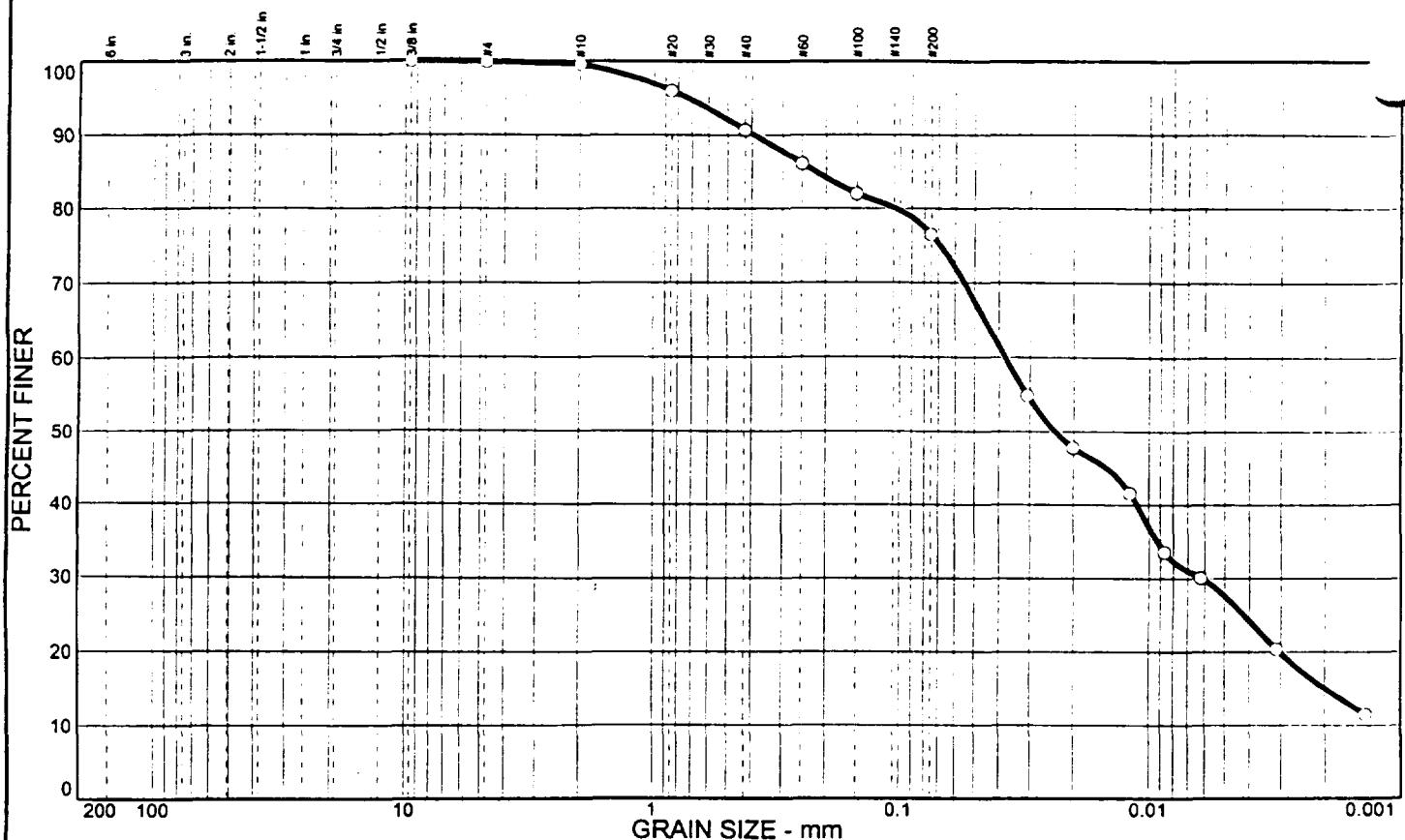
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 6.4 (% coarse = 4.0 % fine = 2.4)
SAND = 19.6 (% coarse = 1.6 % medium = 5.4 % fine = 12.6)
SILT = 53.3 % CLAY = 20.7

D₃₅= 0.30 D₆₀= 0.05 D₅₀= 0.04
D₃₀= 0.01 D₁₅= 0.00

Jay G.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.1	23.4	48.9	27.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, WITH SAND	
	○				○				
.375	100.0			#4	99.9				
				#10	99.6				
				#20	96.0				
				#40	90.7				
				#60	86.1				
				#100	82.0				
				#200	76.5				
GRAIN SIZE									
D ₆₀	0.0378								
D ₃₀	0.0062								
D ₁₀									
COEFFICIENTS									
C _c									
C _u									

○ Source: COC-11

Sample No.: FASED-CSB-S2-0-23"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-27

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-11

ample No.: FASED-CSB-S2-0-23"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 108.20

are = 0.00

ry sample weight = 108.20

ample split on number 10 sieve

plit sample data:

Sample and tare = 56.25 Tare = .00 Sample weight = 56.25

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.11	99.9
# 10	0.41	99.6
# 20	2.06	96.0
# 40	5.05	90.7
# 60	7.63	86.1
# 100	9.92	82.0
# 200	13.06	76.5

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.6

eight of hydrometer sample: 56.25

calculated biased weight= 56.48

able of composite correction values:

Temp, deg C: 18.0 20.5

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.0	39.0	31.0	0.0138	39.0	9.9	0.0307	54.9
5.00	19.0	35.0	27.0	0.0138	35.0	10.6	0.0201	47.8
15.00	19.0	31.5	23.5	0.0138	31.5	11.1	0.0119	41.6
30.00	19.1	27.0	19.0	0.0138	27.0	11.9	0.0087	33.6
60.00	19.1	25.0	17.0	0.0138	25.0	12.2	0.0062	30.1
250.00	20.2	19.5	11.5	0.0136	19.5	13.1	0.0031	20.4
1440.00	18.0	14.5	6.5	0.0140	14.5	13.9	0.0014	11.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.1 (% coarse = % fine = 0.1)

SAND = 23.4 (% coarse = 0.3 % medium = 8.9 % fine = 14.2)

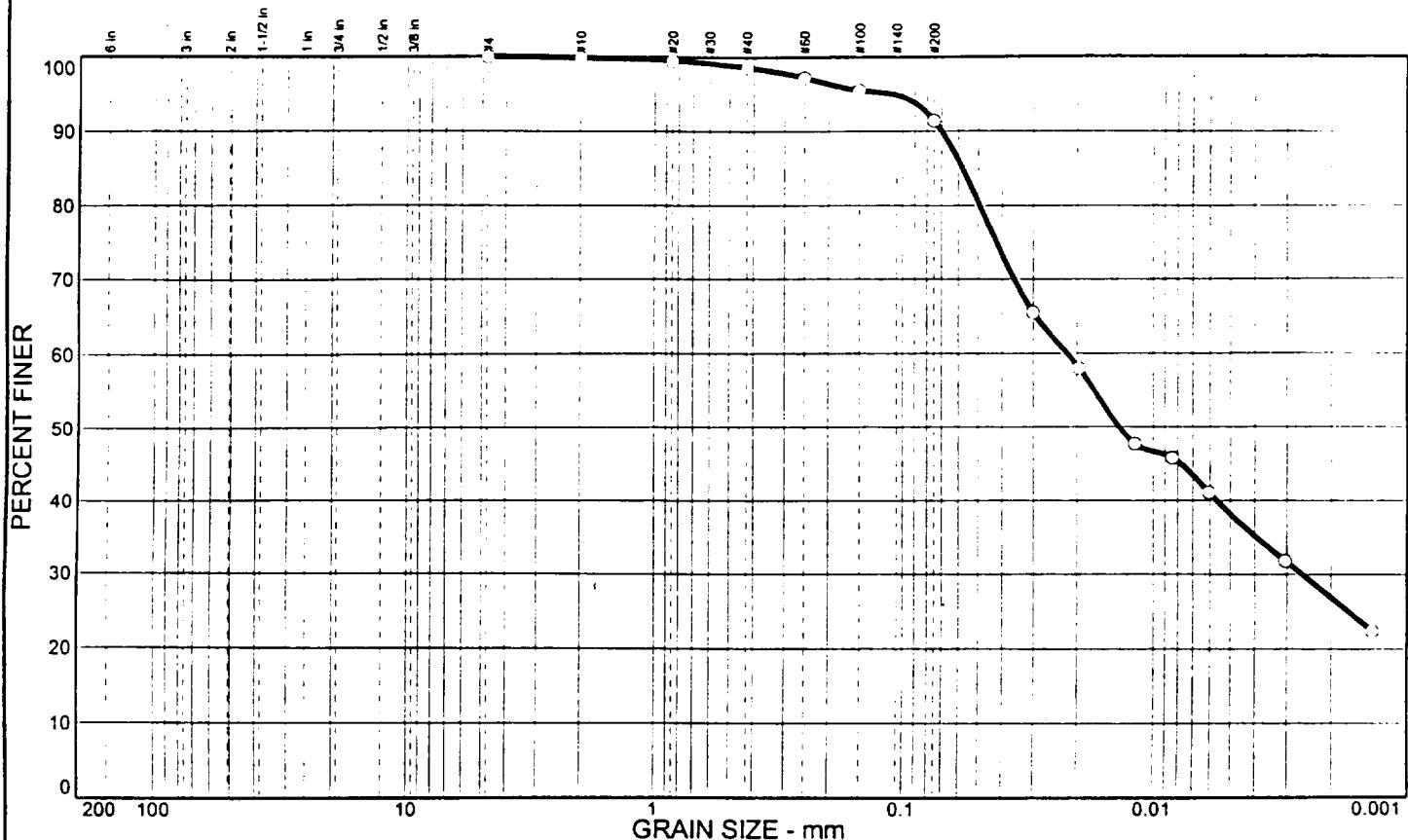
SILT = 48.9 % CLAY = 27.6

D₅= 0.22 D₆₀= 0.04 D₅₀= 0.02

D₁₀= 0.01 D₁₅= 0.00

J. L. J.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			8.6	53.2	38.2	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0219		
D ₃₀	0.0026		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-6

Sample No.: FASED-CSB-S3-0-26"

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.5		
#40	98.6		
#60	97.2		
#100	95.5		
#200	91.4		

SOIL DESCRIPTION
○ SILT, TRACE SAND
REMARKS:
○

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-30

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

ject: SOUTIA SAUGET AREA 1 PROJECT

Object Number: 1999-00-0774

Sample Data

ource: COC-6

ample No.: FASED-CSB-S3-0-26"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 145.32

are = 0.00

ry sample weight = 145.32

ample split on number 10 sieve

plit sample data:

Sample and tare = 53.43 Tare = .00 Sample weight = 53.43

Cumulative weight retained tare= .00

: for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.18	99.9
# 20	0.19	99.5
# 40	0.72	98.6
# 60	1.46	97.2
# 100	2.34	95.5
# 200	4.56	91.4

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.9

eight of hydrometer sample: 53.43

calculated biased weight= 53.48

able of composite correction values:

Temp, deg C: 15.5 19.5

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

ometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	43.0	35.0	0.0140	43.0	9.2	0.0300	65.5
5.00	18.2	39.0	31.0	0.0140	39.0	9.9	0.0196	58.0
15.00	18.3	33.5	25.5	0.0139	33.5	10.8	0.0118	47.7
30.00	18.5	32.5	24.5	0.0139	32.5	11.0	0.0084	45.8
60.00	18.7	30.0	22.0	0.0139	30.0	11.4	0.0060	41.1
250.00	19.5	25.0	17.0	0.0137	25.0	12.2	0.0030	31.8
1440.00	15.4	20.0	12.0	0.0145	20.0	13.0	0.0014	22.4

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

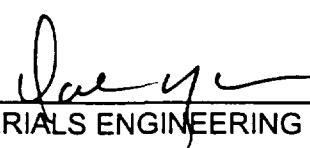
COBBLES = % GRAVEL =

SAND = 8.6 (% coarse = 0.1 % medium = 1.3 % fine = 7.2)

SILT = 53.2 % CLAY = 38.2

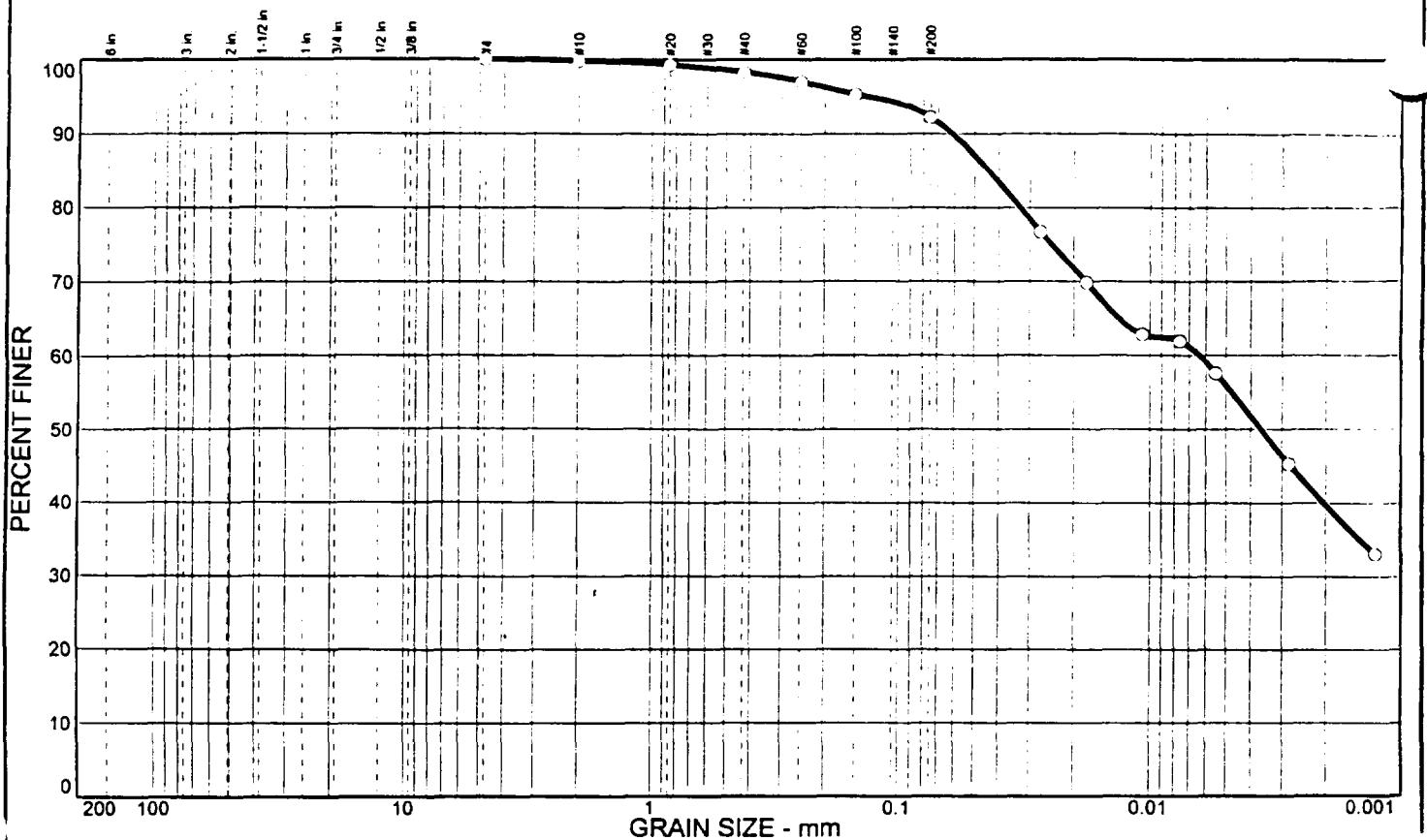
85= 0.06 D₆₀= 0.02 D₅₀= 0.01

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		7.8	36.3	55.9	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ CLAY, TRACE SAND
	○				○			
				#4	100.0			
				#10	99.8			
				#20	99.3			
				#40	98.3			
				#60	97.0			
				#100	95.3			
				#200	92.2			
<hr/>								
GRAIN SIZE								
D ₆₀	0.0064							
D ₃₀								
D ₁₀								
<hr/>								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-11

Sample No.: FASED-CSB-S4W-0-23"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC.
	Project: SOLUTIA SAUGET AREA 1 PROJECT
	Project No.: 1999-00-0774
	267A-33

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-11
ample No.: FASED-CSB-S4W-0-23"
lev. or Depth:
ocation:
escription: CLAY, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 126.14
are = 0.00
ry sample weight = 126.14
mple split on number 10 sieve
plit sample data:

Sample and tare = 57.23 Tare = .00 Sample weight = 57.23
Cumulative weight retained tare= .00
for cumulative weight retained= .00

ieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.27	99.8
# 20	0.29	99.3
# 40	0.88	98.3
# 60	1.59	97.0
# 100	2.57	95.3
# 200	4.38	92.2

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.8
ight of hydrometer sample: 57.23
lculated biased weight= 57.34
able of composite correction values:
Temp, deg C: 18.0 20.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
meter type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.4	52.0	44.0	0.0137	52.0	7.8	0.0271	76.7
5.00	19.4	48.0	40.0	0.0137	48.0	8.4	0.0178	69.8
15.00	19.3	44.0	36.0	0.0138	44.0	9.1	0.0107	62.8
30.00	19.4	43.5	35.5	0.0137	43.5	9.2	0.0076	61.9
60.00	19.4	41.0	33.0	0.0137	41.0	9.6	0.0055	57.6
250.00	20.2	34.0	26.0	0.0136	34.0	10.7	0.0028	45.3
1440.00	18.0	27.0	19.0	0.0140	27.0	11.9	0.0013	33.1

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

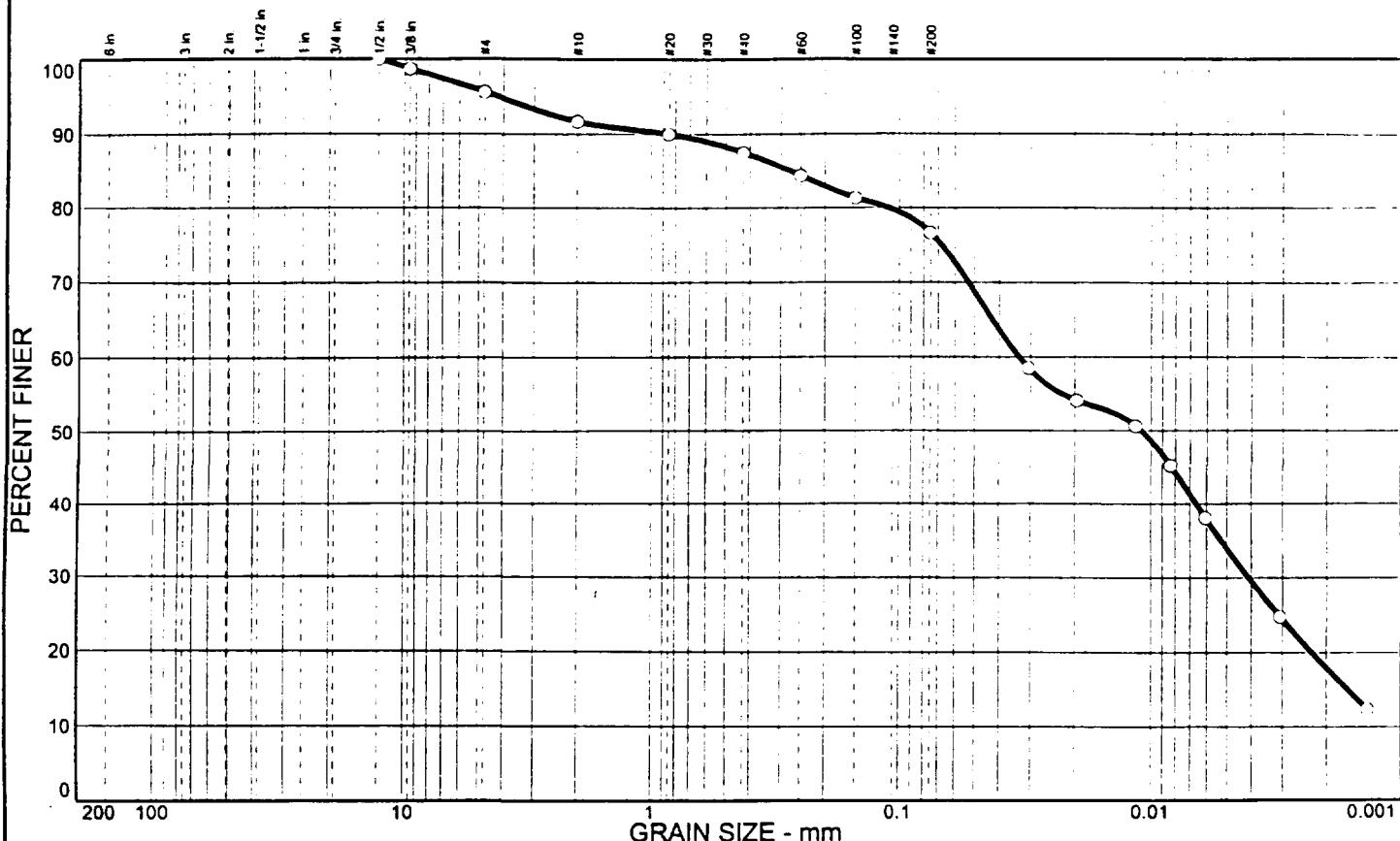
SAND = 7.8 (% coarse = 0.2 % medium = 1.5 % fine = 6.1)

SILT = 36.3 % CLAY = 55.9

D₃₅ = 0.04 D₆₀ = 0.01 D₅₀ = 0.00

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	4.4	19.0	42.6	34.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.5 .375	100.0 98.7		
GRANULAR SIZE			
D ₆₀	0.0333		
D ₃₀	0.0041		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	95.6		
#10	91.7		
#20	90.0		
#40	87.5		
#60	84.4		
#100	81.3		
#200	76.6		

SOIL DESCRIPTION
○ SILT, WITH SAND
REMARKS:
○

○ Source: COC-11

Sample No.: FASED-CSB-S5-0-22"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-36

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-11

ample No.: FASED-CSB-S5-0-22"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 124.14

are = 0.00

ry sample weight = 124.14

ample split on number 10 sieve

plit sample data:

Sample and tare = 51.70 Tare = .00 Sample weight = 51.70

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	1.60	98.7
# 4	5.52	95.6
# 10	10.32	91.7
# 20	0.96	90.0
# 40	2.35	87.5
# 60	4.12	84.4
# 100	5.86	81.3
# 200	8.51	76.6

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 91.7

Weight of hydrometer sample: 51.7

Calculated biased weight= 56.38

Table of composite correction values:

Temp, deg C: 18.0 20.5

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.3	41.0	33.0	0.0139	41.0	9.6	0.0305	58.5
5.00	18.3	38.5	30.5	0.0139	38.5	10.0	0.0197	54.1
15.00	18.4	36.5	28.5	0.0139	36.5	10.3	0.0115	50.6
30.00	18.5	33.5	25.5	0.0139	33.5	10.8	0.0083	45.2
60.00	18.7	29.5	21.5	0.0139	29.5	11.5	0.0061	38.1
250.00	20.1	22.0	14.0	0.0136	22.0	12.7	0.0031	24.8
1440.00	18.0	15.0	7.0	0.0140	15.0	13.8	0.0014	12.4

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

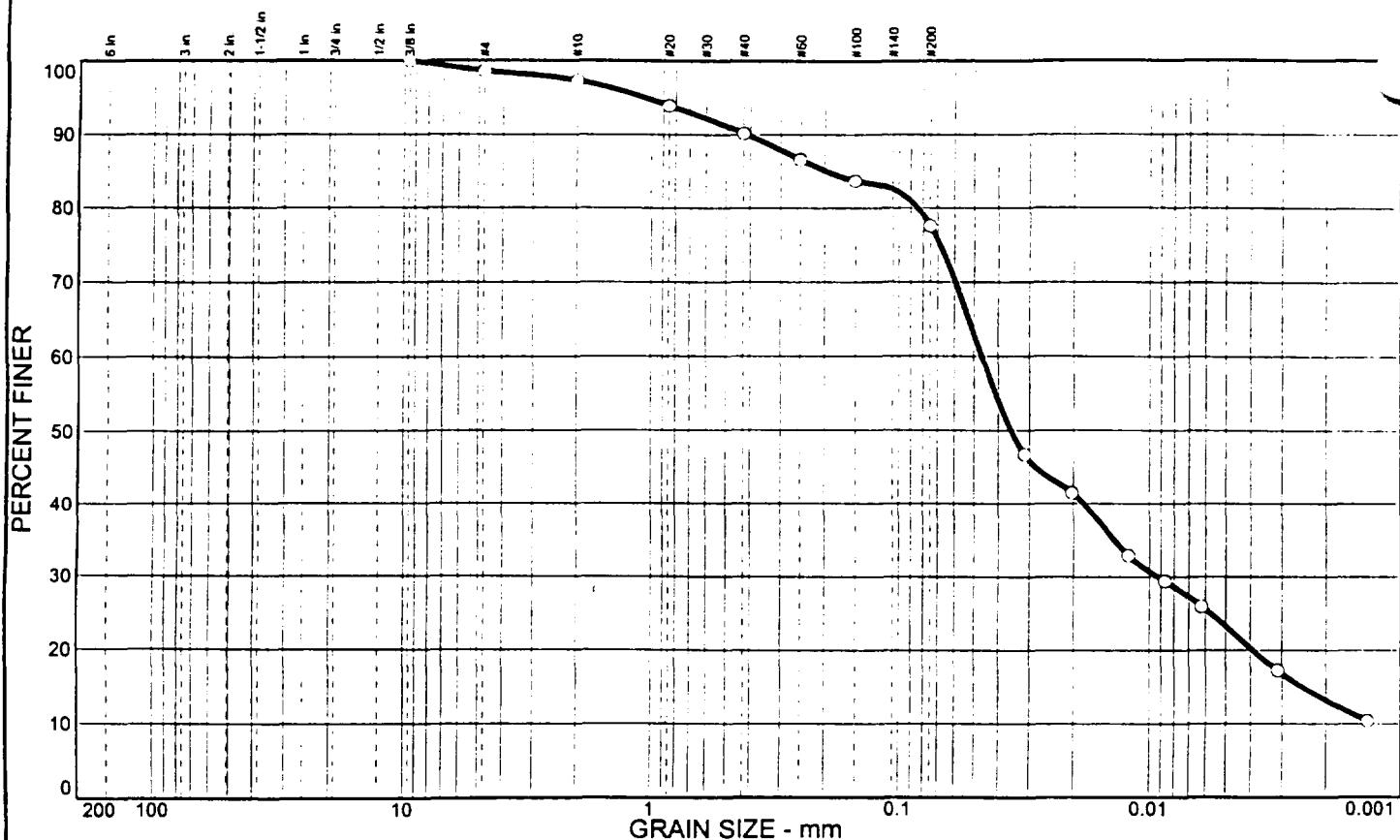
COBBLES = % GRAVEL = 4.4 (% coarse = % fine = 4.4)
 SAND = 19.0 (% coarse = 3.9 % medium = 4.2 % fine = 10.9)
 SILT = 42.6 % CLAY = 34.0

D5= 0.27 D60= 0.03 D50= 0.01
 D0= 0.00 D15= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.4	21.0	54.3	23.3	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	98.6			○ SILT, WITH SAND
				#10	97.3			
				#20	93.9			
				#40	90.2			
				#60	86.6			
				#100	83.7			
				#200	77.6			
GRAIN SIZE								
D ₆₀	0.0464							
D ₃₀	0.0093							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-2

Sample No.: FASED-CSB-S6-0-20"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-39

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-CSB-S6-0-20"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 101.09
are = 0.00
ry sample weight = 101.09
mple split on number 10 sieve
plit sample data:

Sample and tare = 56.25 Tare = .00 Sample weight = 56.25

Cumulative weight retained tare= .00
for cumulative weight retained= .00

ieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	1.37	98.6
# 10	2.76	97.3
# 20	1.98	93.9
# 40	4.08	90.2
# 60	6.17	86.6
# 100	7.86	83.7
# 200	11.40	77.6

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 97.3
ight of hydrometer sample: 56.25
lculated biased weight= 57.81
ble of composite correction values:
Temp, deg C: 21.0 16.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
meter type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	35.0	27.0	0.0136	35.0	10.6	0.0313	46.7
5.00	20.2	32.0	24.0	0.0136	32.0	11.0	0.0202	41.5
15.00	20.2	27.0	19.0	0.0136	27.0	11.9	0.0121	32.9
30.00	20.2	25.0	17.0	0.0136	25.0	12.2	0.0087	29.4
60.00	20.2	23.0	15.0	0.0136	23.0	12.5	0.0062	26.0
250.00	20.9	18.0	10.0	0.0135	18.0	13.3	0.0031	17.3
1440.00	19.1	14.0	6.0	0.0138	14.0	14.0	0.0014	10.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 1.4 (% coarse = % fine = 1.4)

SAND = 21.0 (% coarse = 1.3 % medium = 7.1 % fine = 12.6)

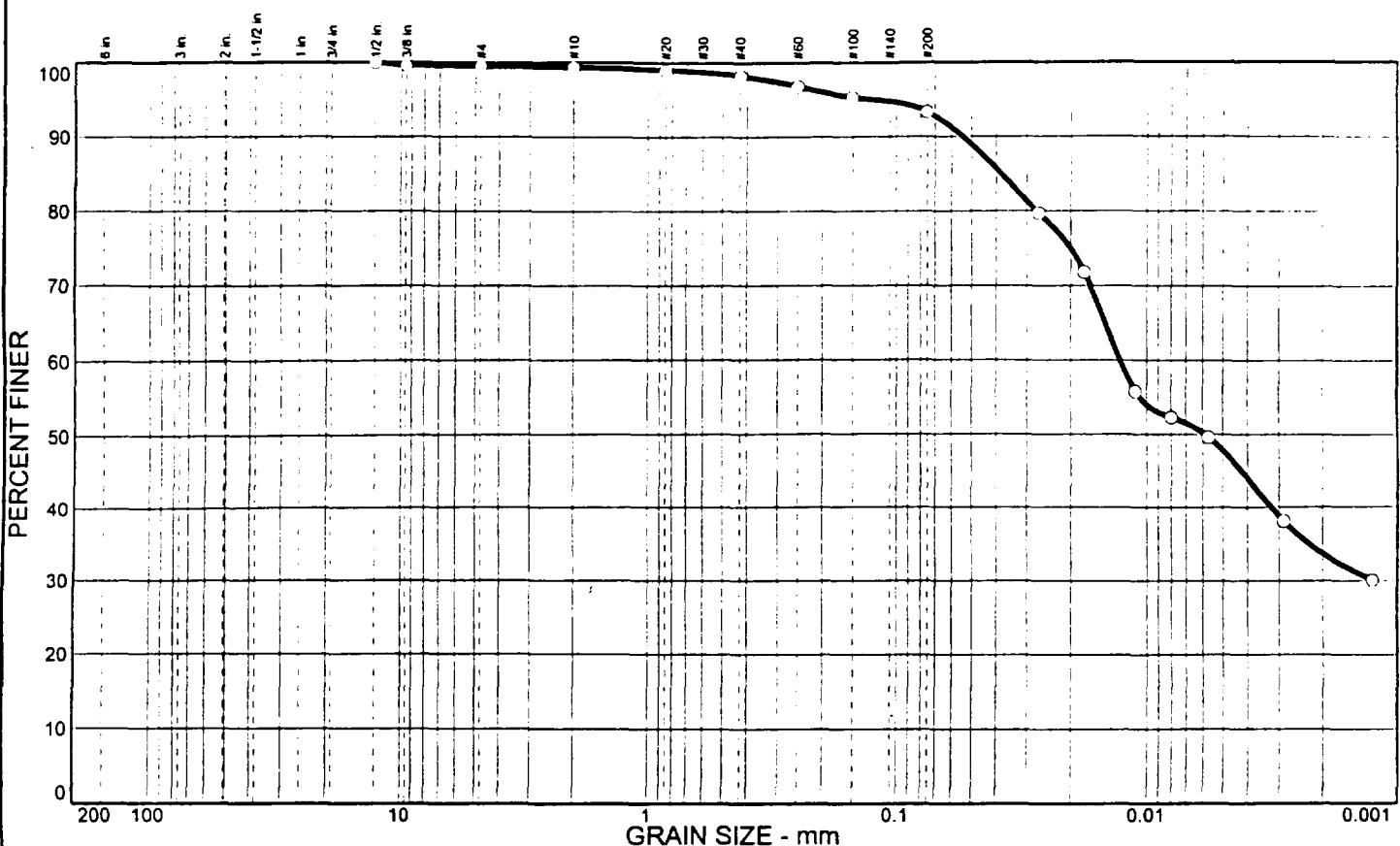
SILT = 54.3 % CLAY = 23.3

D₅= 0.20 D₆₀= 0.05 D₅₀= 0.04

D₁₀= 0.01 D₁₅= 0.00

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0.5	6.2	45.4	47.9	---	---	---	---	---

SIEVE inches size	PERCENT FINER		SIEVE number size	PERCENT FINER		SOIL DESCRIPTION CLAY, TRACE SAND
	○	○		○	○	
.375	100.0 99.6		#4	99.5		
GRAIN SIZE						
D ₆₀	0.0128		#10	99.3		
D ₃₀			#20	99.0		
D ₁₀			#40	98.2		
COEFFICIENTS						
C _c			#60	96.8		
C _u			#100	95.3		
			#200	93.3		
REMARKS:						
○						

Source:

Sample No.: FASED-CSB-S7-0-18"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-42

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource:

ample No.: FASED-CSB-S7-0-18"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: CLAY, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 155.97

are = 0.00

ry sample weight = 155.97

ample split on number 10 sieve

plit sample data:

Sample and tare = 56.04 Tare = .00 Sample weight = 56.04

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	0.70	99.6
# 4	0.82	99.5
# 10	1.09	99.3
# 20	0.15	99.0
# 40	0.64	98.2
# 60	1.42	96.8
# 100	2.27	95.3
# 200	3.41	93.3

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.3

eight of hydrometer sample: 56.04

alculated biased weight= 56.44

able of composite correction values:

Temp, deg C: 19.5 22.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

ific gravity of solids= 2.65

ific gravity correction factor= 1.000

drometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.5	53.0	45.0	0.0137	53.0	7.6	0.0268	79.7
5.00	19.6	48.5	40.5	0.0137	48.5	8.3	0.0177	71.8
15.00	19.7	39.5	31.5	0.0137	39.5	9.8	0.0111	55.8
30.00	19.8	37.5	29.5	0.0137	37.5	10.1	0.0080	52.3
60.00	20.1	36.0	28.0	0.0136	36.0	10.4	0.0057	49.6
250.00	21.6	29.5	21.5	0.0134	29.5	11.5	0.0029	38.1
1440.00	19.5	25.0	17.0	0.0137	25.0	12.2	0.0013	30.1

Fractional Components

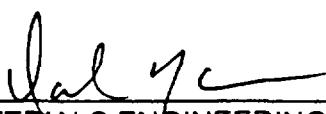
Gravel/Sand based on #4
Sand/Fines based on #200

COBBLES = % GRAVEL = 0.5 (% coarse = % fine = 0.5)

SAND = 6.2 (% coarse = 0.2 % medium = 1.1 % fine = 4.9)

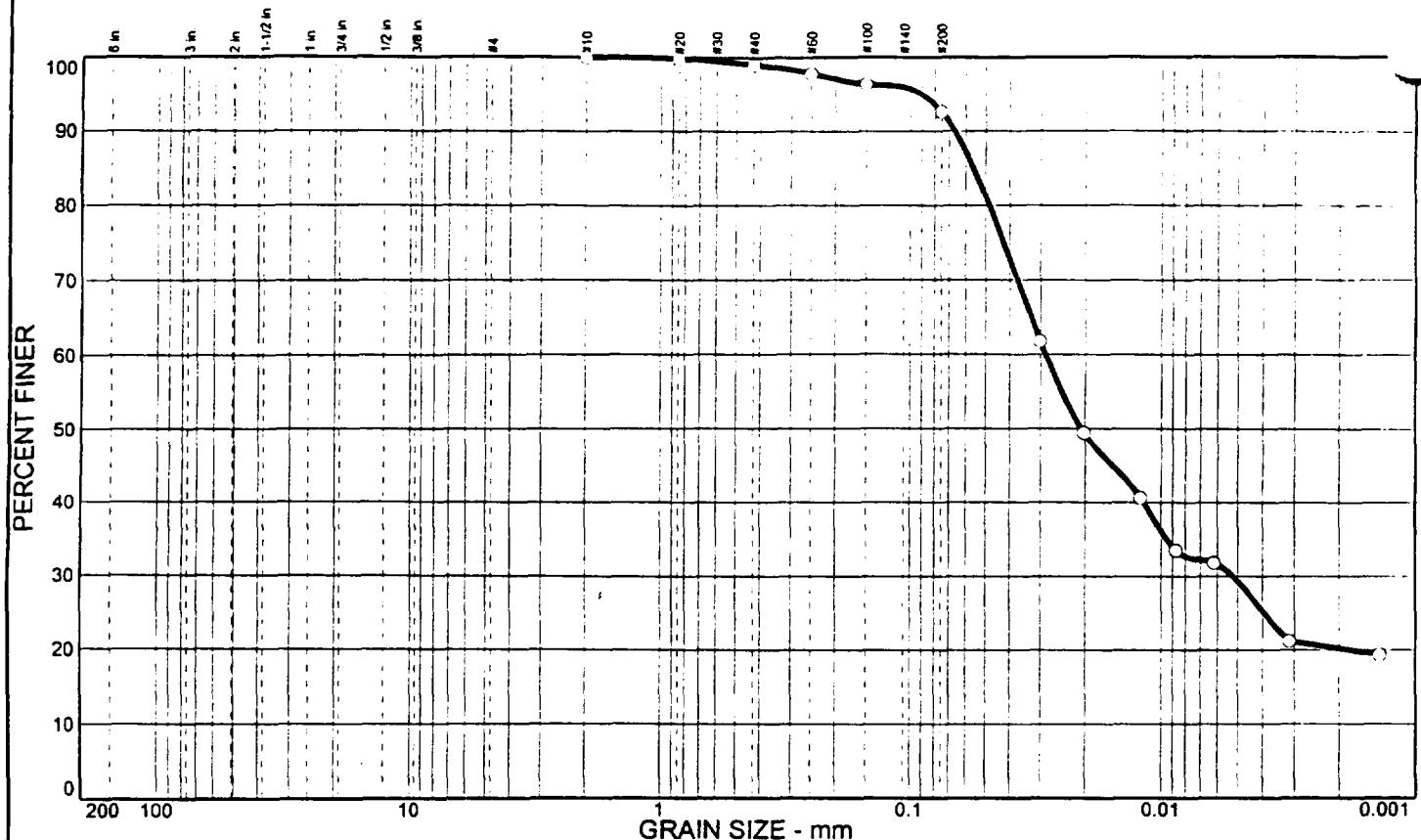
SILT = 45.4 % CLAY = 47.9

D5= 0.04 D60= 0.01 D50= 0.01



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		7.4	63.3	29.3	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0286		
D ₃₀	0.0052		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-3

SIEVE number size	PERCENT FINER		
	○		
#10	100.0		
#20	99.8		
#40	99.0		
#60	97.8		
#100	96.3		
#200	92.6		

SOIL DESCRIPTION
 SILT, TRACE SAND

REMARKS:

Sample No.: FASED-CSB-S8E-0-22"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-45

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-3

ample No.: FASED-CSB-S8E-0-22"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 157.16

are = 0.00

ry sample weight = 157.16

ample split on number 10 sieve

plit sample data:

Sample and tare = 56.65 Tare = .00 Sample weight = 56.65

-mulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.13	99.8
# 40	0.55	99.0
# 60	1.27	97.8
# 100	2.12	96.3
# 200	4.21	92.6

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 100.0

ight of hydrometer sample: 56.65

lculated biased weight= 56.65

able of composite correction values:

Temp, deg C: 15.5 19.5

Comp. corr: -8.0 -8.0

nniscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.1	43.0	35.0	0.0140	43.0	9.2	0.0300	61.8
5.00	18.2	36.0	28.0	0.0140	36.0	10.4	0.0201	49.4
15.00	18.3	31.0	23.0	0.0139	31.0	11.2	0.0121	40.6
30.00	18.6	27.0	19.0	0.0139	27.0	11.9	0.0087	33.5
60.00	19.0	26.0	18.0	0.0138	26.0	12.0	0.0062	31.8
250.00	19.5	20.0	12.0	0.0137	20.0	13.0	0.0031	21.2
1440.00	15.4	19.0	11.0	0.0145	19.0	13.2	0.0014	19.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 7.4 (% coarse = % medium = 1.0 % fine = 6.4)

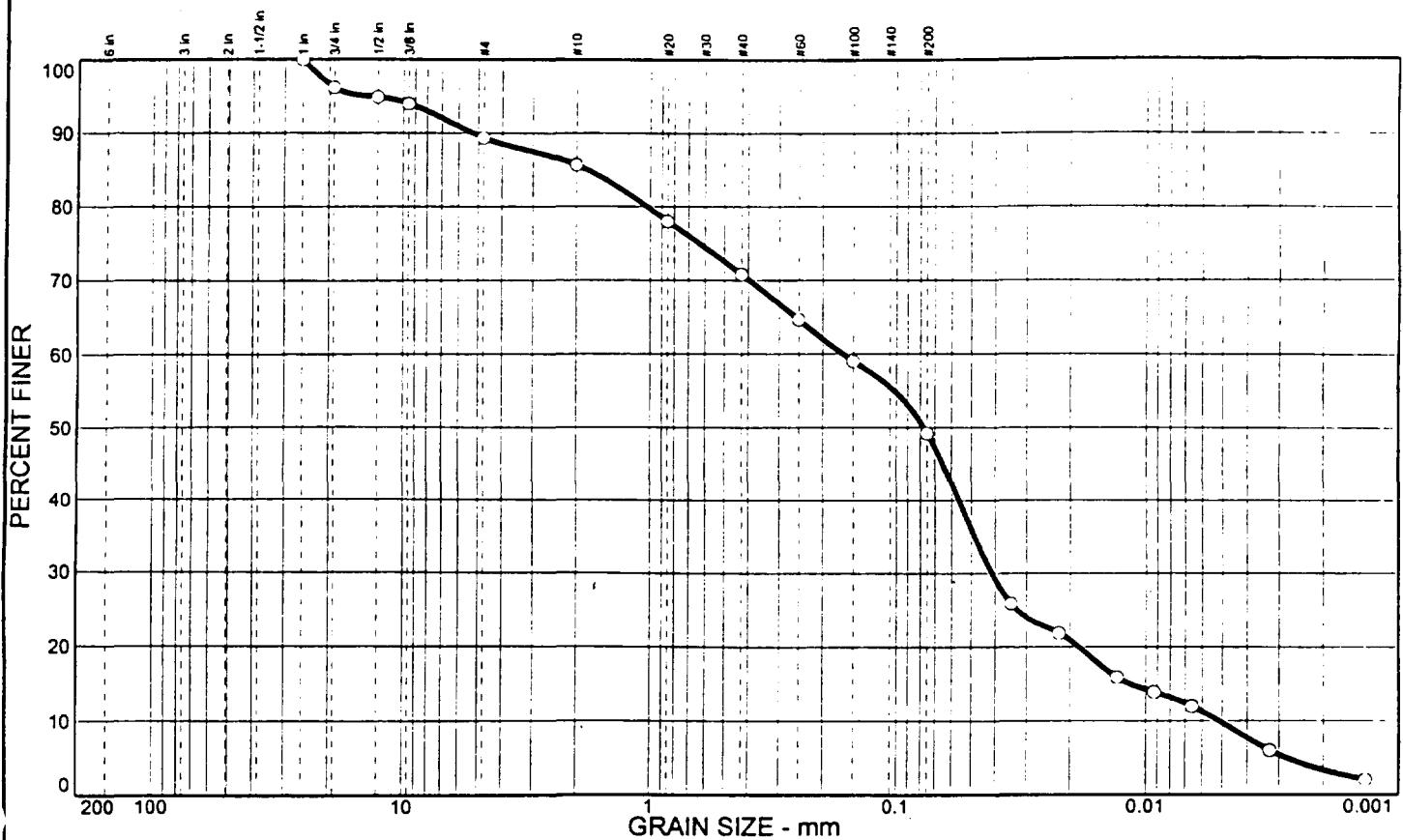
SILT = 63.3 (% CLAY = 29.3

D5= 0.06 D60= 0.03 D50= 0.02

D0= 0.01

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	10.6	40.2	39.5	9.7	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.75	100.0		
.5	96.2		
.375	94.9		
	94.0		

GRAIN SIZE			
D ₆₀	D ₃₀	D ₁₀	
0.166	0.0411	0.0051	

COEFFICIENTS			
C _c			
1.99			
C _u	32.21		

SIEVE number size	PERCENT FINER		
	○		
#4	89.4		
#10	85.7		
#20	78.0		
#40	70.8		
#60	64.7		
#100	59.0		
#200	49.2		

SOIL DESCRIPTION
○ SILTY MEDIUM TO FINE SAND, LITTLE GRAVEL

REMARKS:

○ Source: COC-2

Sample No.: FASED-CSB-S9W-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-48

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-CSB-S9W-0-9"
lev. or Depth:
ocation:
escription: SILTY MEDIUM TO FINE SAND, LITTLE GRAVEL
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial
ry sample and tare= 61.76
are = 0.00
ry sample weight = 61.76
mple split on number 10 sieve
plit sample data:
Sample and tare = 43.03 Tare = .00 Sample weight = 43.03
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
1 inch	0.00	100.0
.75 inch	2.33	96.2
.5 inch	3.17	94.9
.375 inch	3.72	94.0
# 4	6.52	89.4
# 10	8.83	85.7
# 20	3.85	78.0
# 40	7.46	70.8
# 60	10.54	64.7
# 100	13.42	59.0
# 200	18.32	49.2

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 85.7
ight of hydrometer sample: 43.03
lculated biased weight= 50.21
ble of composite correction values:
Temp, deg C: 22.0 19.0
Comp. corr: -8.0 -8.0

.scus correction only= 0
ecific gravity of solids= 2.65
ecific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

267A-49

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	21.0	13.0	0.0136	21.0	12.9	0.0345	25.9
5.00	20.2	19.0	11.0	0.0136	19.0	13.2	0.0221	21.9
15.00	20.2	16.0	8.0	0.0136	16.0	13.7	0.0130	15.9
30.00	20.2	15.0	7.0	0.0136	15.0	13.8	0.0092	13.9
60.00	20.2	14.0	6.0	0.0136	14.0	14.0	0.0066	12.0
250.00	20.9	11.0	3.0	0.0135	11.0	14.5	0.0032	6.0
1440.00	21.6	9.0	1.0	0.0134	9.0	14.8	0.0014	2.0

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 10.6 (% coarse = 3.8 % fine = 6.8)

SAND = 40.2 (% coarse = 3.7 % medium = 14.9 % fine = 21.6)

SILT = 39.5 % CLAY = 9.7

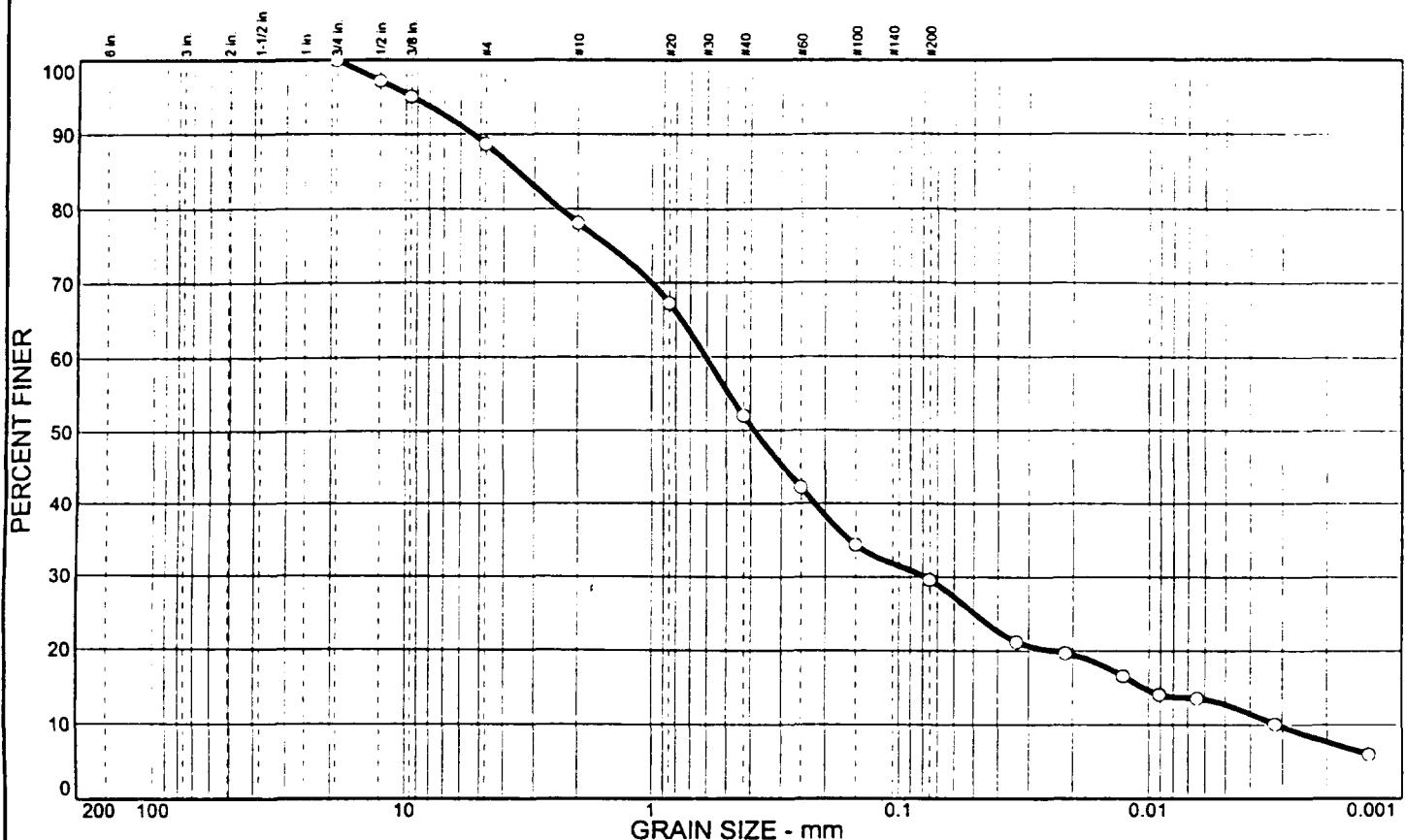
D₃₅ = 1.80 D₆₀ = 0.17 D₅₀ = 0.08

D₃₀ = 0.04 D₁₅ = 0.01 D₁₀ = 0.01

C_u = 1.9876 C_u = 32.2051

Pal 7c
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	11.3	59.1	16.8	12.8	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.75	100.0			#4	88.7			○ SILTY COARSE TO FINE SAND, LITTLE GRAVEL
.5	97.2			#10	78.1			
.375	95.1			#20	67.2			
				#40	52.0			
				#60	42.2			
				#100	34.4			
				#200	29.6			
GRAIN SIZE								
D ₆₀	0.605							
D ₃₀	0.0789							
D ₁₀	0.0031							
COEFFICIENTS								
C _c	3.28							
C _u	193.10							

REMARKS:

○

○ Source: COC-2

Sample No.: FASED-CSB-S10W-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-51

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Object Number: 1999-00-0774

Sample Data

Source: COC-2
Sample No.: FASED-CSB-S10W-0-9"
Elev. or Depth:
Location:
Description: SILTY COARSE TO FINE SAND, LITTLE GRAVEL
Liquid Limit: - - -
ISCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare = 272.15
tare = 0.00
dry sample weight = 272.15
sample split on number 10 sieve
split sample data:

Sample and tare = 77.52 Tare = .00 Sample weight = 77.52

Cumulative weight retained tare = .00
for cumulative weight retained = .00

sieve	Cumul. Wt.	Percent
	retained	finer
.75 inch	0.00	100.0
.5 inch	7.57	97.2
.375 inch	13.22	95.1
# 4	30.88	88.7
# 10	59.61	78.1
# 20	10.79	67.2
# 40	25.95	52.0
# 60	35.63	42.2
# 100	43.37	34.4
# 200	48.11	29.6

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 78.1
Weight of hydrometer sample: 77.52
Calculated biased weight= 99.26
Table of composite correction values:

Temp, deg C: 19.0 16.0
Comp. corr: -8.0 -8.0

SCS correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.4	29.0	21.0	0.0139	29.0	11.5	0.0334	21.2
5.00	18.4	27.5	19.5	0.0139	27.5	11.8	0.0214	19.7
15.00	18.3	24.5	16.5	0.0139	24.5	12.3	0.0126	16.6
30.00	18.3	22.0	14.0	0.0139	22.0	12.7	0.0091	14.1
60.00	18.3	21.5	13.5	0.0139	21.5	12.8	0.0064	13.6
250.00	19.1	18.0	10.0	0.0138	18.0	13.3	0.0032	10.1
1440.00	19.1	14.0	6.0	0.0138	14.0	14.0	0.0014	6.0

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

% COBBLES = % GRAVEL = 11.3 (% coarse = % fine = 11.3)

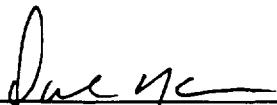
% SAND = 59.1 (% coarse = 10.6 % medium = 26.1 % fine = 22.4)

% SILT = 16.8 % CLAY = 12.8

D₈₅= 3.49 D₆₀= 0.61 D₅₀= 0.39

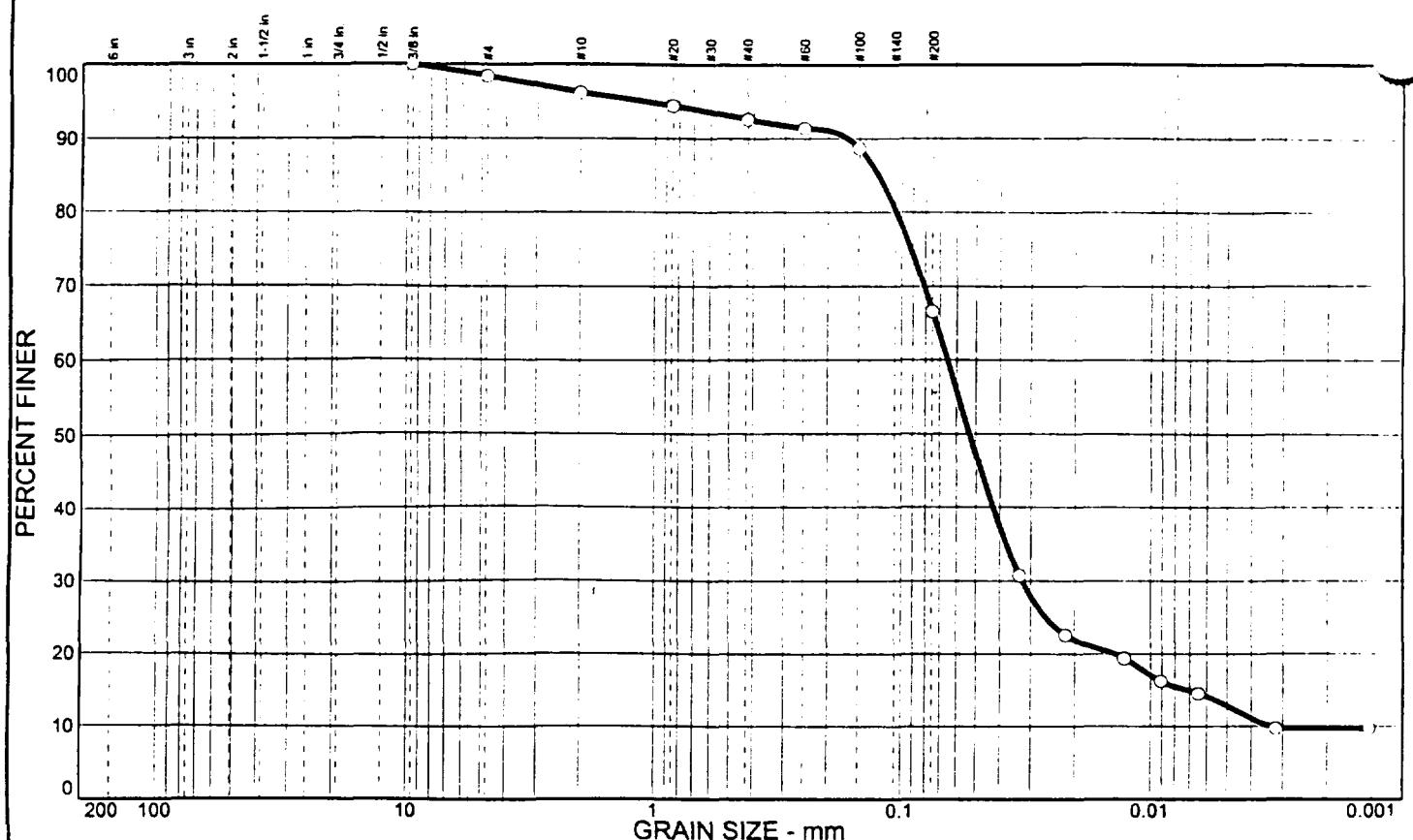
D₃₀= 0.08 D₁₅= 0.01 D₁₀= 0.00

C_c= 3.2769 C_u= 193.1011



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.6	31.8	53.8	12.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0651		
D ₃₀	0.0324		
D ₁₀	0.0034		
COEFFICIENTS			
C _c	4.76		
C _u	19.25		

SIEVE number size	PERCENT FINER		
	○		
#4	98.4		
#10	96.2		
#20	94.4		
#40	92.6		
#60	91.4		
#100	88.7		
#200	66.6		

SOIL DESCRIPTION

○ FINE SANDY SILT, TRACE LIMESTONE

REMARKS:

○

○ Source: COC-6

Sample No.: FASED-CSC-S1-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-54

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-6
ample No.: FASED-CSC-S1-0-13"
lev. or Depth: Sample Length (in./cm.):
ocation:
escription: FINE SANDY SILT, TRACE LIMESTONE
iquid Limit: - - - Plastic Limit: - - -
SCS Classification: - - - AASHTO Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 167.41
are = 0.00
ry sample weight = 167.41
ample split on number 10 sieve
plit sample data:

Sample and tare = 59.57 Tare = .00 Sample weight = 59.57

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	2.70	98.4
# 10	6.33	96.2
# 20	1.14	94.4
# 40	2.21	92.6
# 60	2.98	91.4
# 100	4.65	88.7
# 200	18.36	66.6

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 96.2
eight of hydrometer sample: 59.57
alculated biased weight= 61.92
able of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
ific gravity correction factor= 1.000
rometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	27.0	19.0	0.0136	27.0	11.9	0.0332	30.7
5.00	20.2	22.0	14.0	0.0136	22.0	12.7	0.0217	22.6
15.00	20.2	20.0	12.0	0.0136	20.0	13.0	0.0127	19.4
30.00	20.2	18.0	10.0	0.0136	18.0	13.3	0.0091	16.2
60.00	20.2	17.0	9.0	0.0136	17.0	13.5	0.0065	14.5
250.00	20.9	14.0	6.0	0.0135	14.0	14.0	0.0032	9.7
1440.00	19.2	14.0	6.0	0.0138	14.0	14.0	0.0014	9.7

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 1.6 (% coarse = % fine = 1.6)

SAND = 31.8 (% coarse = 2.2 % medium = 3.6 % fine = 26.0)

SILT = 53.8 % CLAY = 12.8

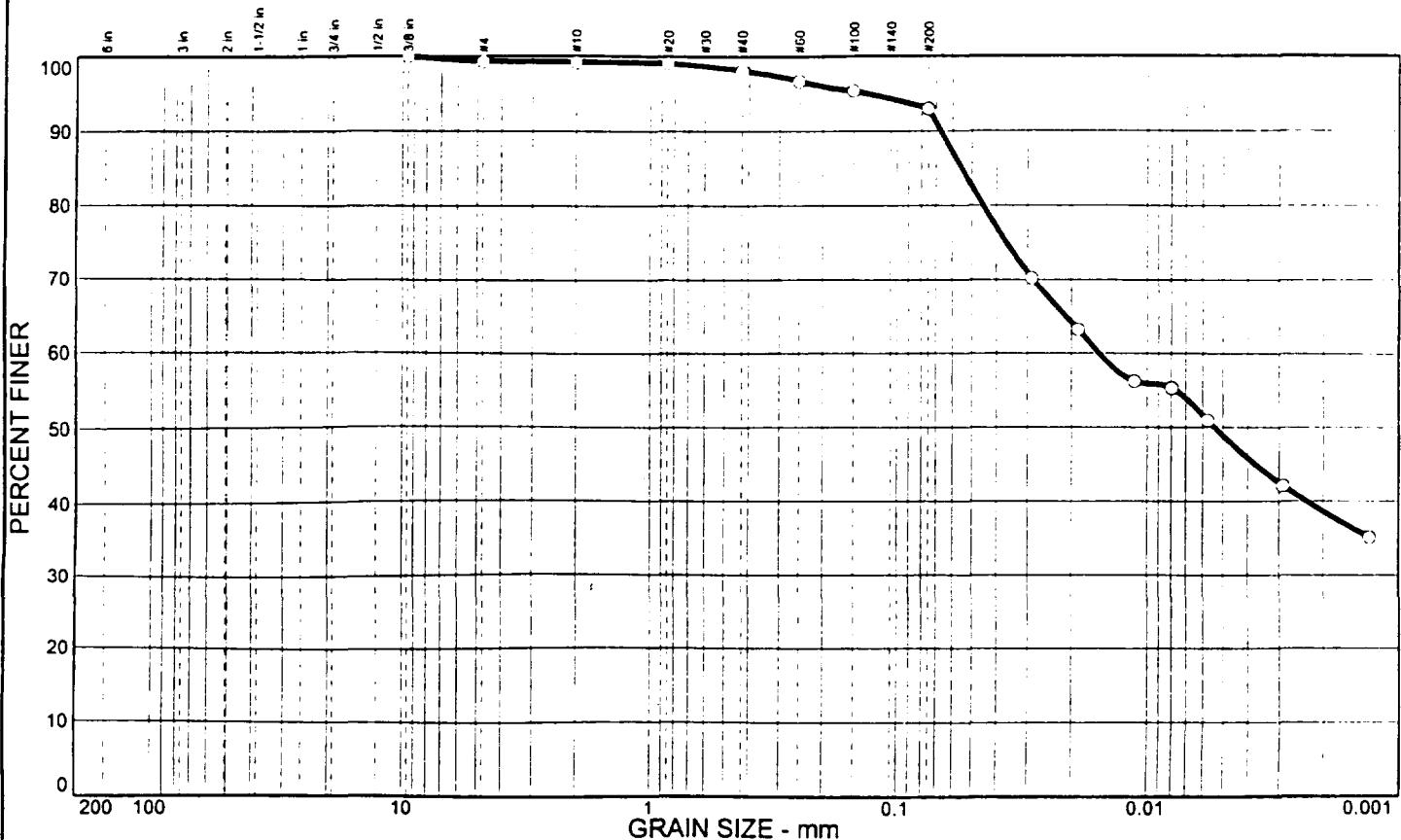
85= 0.12 D₆₀= 0.07 D₅₀= 0.05

30= 0.03 D₁₅= 0.01 D₁₀= 0.00

c= 4.7628 Cu= 19.253

J.W.Y.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.7	6.3	44.2	48.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0155		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	C		
#4	99.3		
#10	99.2		
#20	99.1		
#40	98.1		
#60	96.7		
#100	95.4		
#200	93.0		

SOIL DESCRIPTION
 CLAY, TRACE SAND

REMARKS:

Source: COC-6

Sample No.: FASED-CSC-S2-0-28"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-57

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-6
ample No.: FASED-CSC-S2-0-28"
lev. or Depth: Sample Length (in./cm.):
ocation:
escription: CLAY, TRACE SAND
iquid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial
ry sample and tare= 100.54
are = 0.00
ry sample weight = 100.54
ample split on number 10 sieve
plit sample data:
Sample and tare = 56.52 Tare = .00 Sample weight = 56.52
Cumulative weight retained tare= .00
for cumulative weight retained= .00

sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.68	99.3
# 10	0.80	99.2
# 20	0.08	99.1
# 40	0.65	98.1
# 60	1.44	96.7
# 100	2.18	95.4
# 200	3.53	93.0

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 99.2
ight of hydrometer sample: 56.52
lculated biased weight= 56.98
ble of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
ifric gravity correction factor= 1.000
ometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	48.0	40.0	0.0140	48.0	8.4	0.0286	70.2
5.00	18.2	44.0	36.0	0.0140	44.0	9.1	0.0188	63.2
15.00	18.4	40.0	32.0	0.0139	40.0	9.7	0.0112	56.2
30.00	18.4	39.5	31.5	0.0139	39.5	9.8	0.0080	55.3
60.00	18.7	37.0	29.0	0.0139	37.0	10.2	0.0057	50.9
250.00	19.5	32.0	24.0	0.0137	32.0	11.0	0.0029	42.1
1440.00	15.4	28.0	20.0	0.0145	28.0	11.7	0.0013	35.1

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.7 (% coarse = % fine = 0.7)

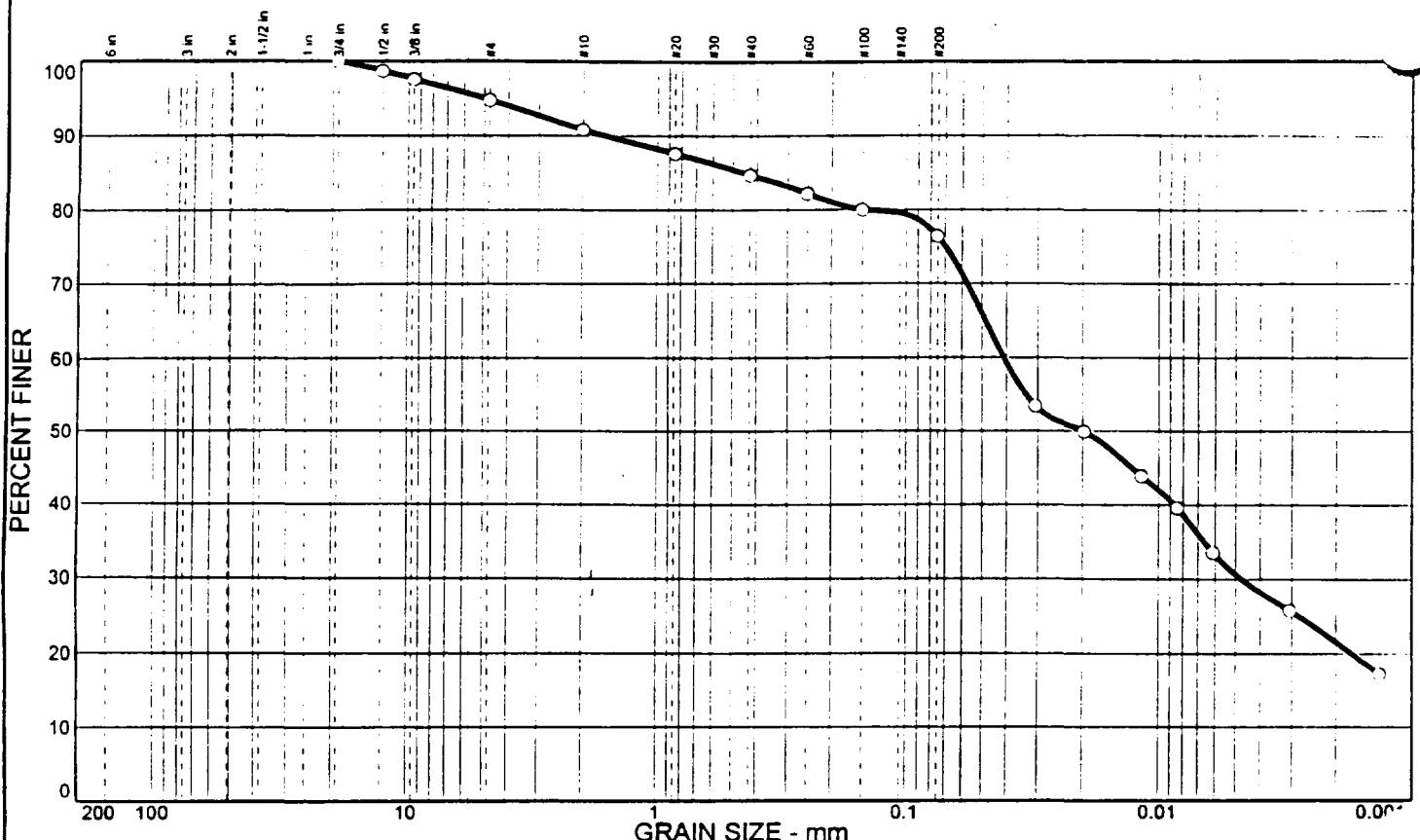
SAND = 6.3 (% coarse = 0.1 % medium = 1.1 % fine = 5.1)

SILT = 44.2 % CLAY = 48.8

D₃₅ = 0.06 D₆₀ = 0.02 D₅₀ = 0.01

Paul M.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
O	5.2	18.4	45.8	30.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.75	100.0		
.5	98.7		
.375	97.6		

GRAIN SIZE		
D ₆₀	D ₃₀	D ₁₀
0.0410	0.0047	

COEFFICIENTS		
C _c		

SIEVE number size	PERCENT FINER		
	O		
#4	94.8		
#10	90.8		
#20	87.6		
#40	84.7		
#60	82.2		
#100	80.0		
#200	76.4		

SOIL DESCRIPTION
O SILT, WITH SAND

REMARKS:
O

Source: COC-11

Sample No.: FASED-CSC-S3-0-20

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-60

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-11
mple No.: FASED-CSC-S3-0-22"
ev. or Depth:
cation:
scription: SILT, WITH SAND
quid Limit: - - -
CS Classification: - - -
sting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

g sample and tare= 94.84
re = 0.00
g sample weight = 94.84
mple split on number 10 sieve

lit sample data:

Sample and tare = 52.75 Tare = .00 Sample weight = 52.75

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve	Cumul. Wt.	Percent
	retained	finer
.75 inch	0.00	100.0
.5 inch	1.27	98.7
.375 inch	2.28	97.6
# 4	4.94	94.8
# 10	8.70	90.8
# 20	1.89	87.6
# 40	3.55	84.7
# 60	4.99	82.2
# 100	6.30	80.0
# 200	8.35	76.4

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 90.8
ight of hydrometer sample: 52.75
lculated biased weight= 58.09
ole of composite correction values:
Temp, deg C: 18.0 20.5
Comp. corr: -8.0 -8.0

scus correction only= 0
fic gravity of solids= 2.65
ific gravity correction factor= 1.000
rometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

267A-61

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.2	39.0	31.0	0.0138	39.0	9.9	0.0307	53.4
5.00	19.2	37.0	29.0	0.0138	37.0	10.2	0.0197	49.9
15.00	19.2	33.5	25.5	0.0138	33.5	10.8	0.0117	43.9
30.00	19.2	31.0	23.0	0.0138	31.0	11.2	0.0084	39.6
60.00	19.2	27.5	19.5	0.0138	27.5	11.8	0.0061	33.6
250.00	20.2	23.0	15.0	0.0136	23.0	12.5	0.0030	25.8
1440.00	18.0	18.0	10.0	0.0140	18.0	13.3	0.0013	17.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 5.2 (% coarse = % fine = 5.2)

SAND = 18.4 (% coarse = 4.0 % medium = 6.1 % fine = 8.3)

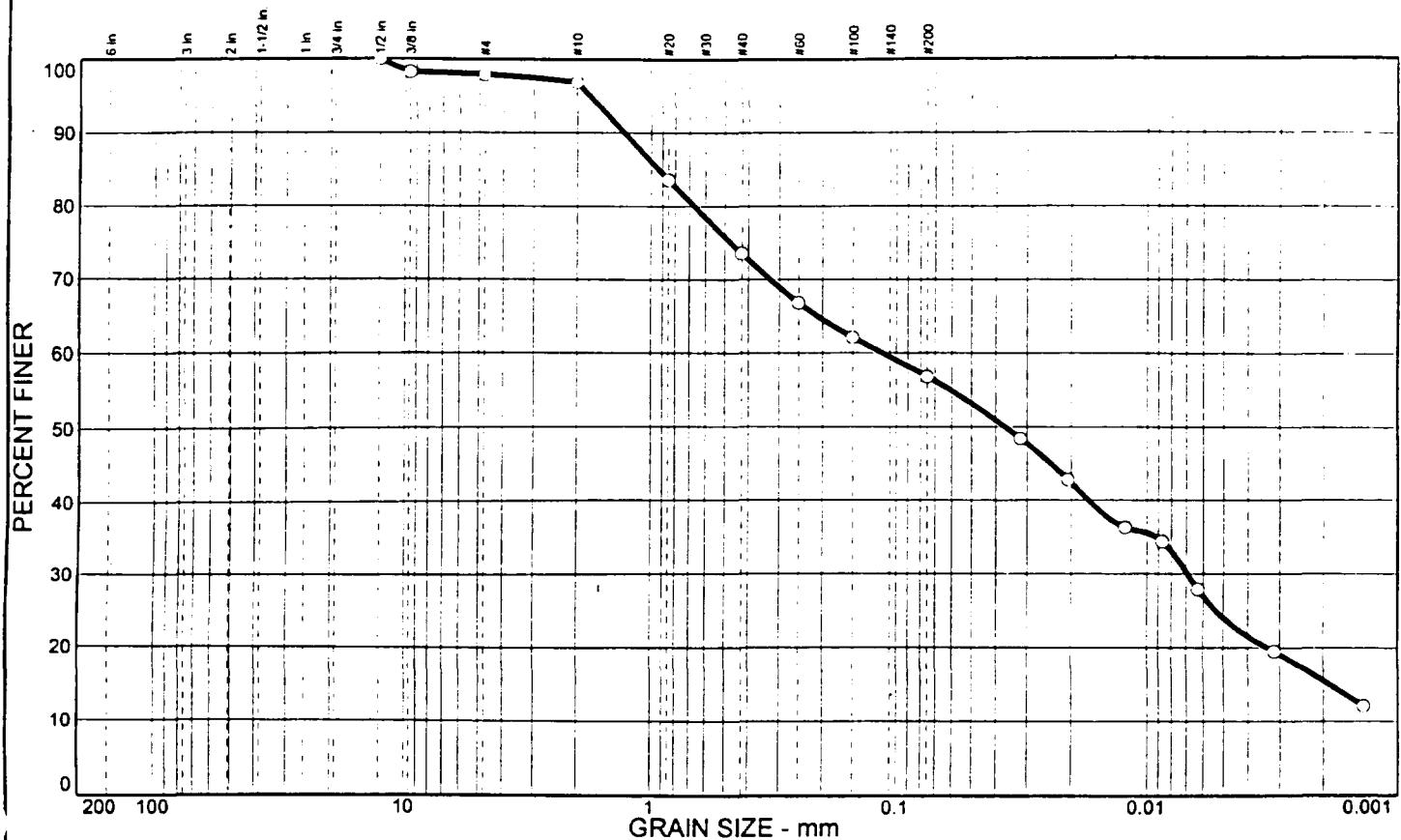
SILT = 45.8 % CLAY = 30.6

D₃₅ = 0.45 D₆₀ = 0.04 D₅₀ = 0.02

D₀ = 0.00

John J. C.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
()	2.1	41.1	32.7	24.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.375	100.0 98.2		
<hr/>			
GRAIN SIZE			
D ₆₀	0.114		
D ₃₀	0.0069		
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	O		
#4	97.9		
#10	96.9		
#20	83.6		
#40	73.6		
#60	66.8		
#100	62.1		
#200	56.8		

SOIL DESCRIPTION
 MEDIUM TO FINE SANDY SILT

REMARKS:

Source: COC-11

Sample No.: FASED-CSC-S4-0-22"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-63

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

ient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

urce: COC-11

mple No.: FASED-CSC-S4-0-22"

ev. or Depth:

Sample Length (in./cm.):

cation:

scription: MEDIUM TO FINE SANDY SILT

quid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

sting Remarks:

Mechanical Analysis Data

Initial

y sample and tare= 77.58

re = 0.00

y sample weight = 77.58

mple split on number 10 sieve

lit sample data:

Sample and tare = 84.87 Tare = .00 Sample weight = 84.87

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	1.42	98.2
# 4	1.66	97.9
# 10	2.44	96.9
# 20	11.61	83.6
# 40	20.41	73.6
# 60	26.34	66.8
# 100	30.49	62.1
# 200	35.15	56.8

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 96.9

ight of hydrometer sample: 52.07

lculated biased weight= 53.74

ble of composite correction values:

Temp, deg C: 18.0 20.5

Comp. corr: -8.0 -8.0

niscus correction only= 0

ific gravity of solids= 2.65

ific gravity correction factor= 1.000

idrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.3	34.0	26.0	0.0138	34.0	10.7	0.0319	48.4
5.00	19.3	31.0	23.0	0.0138	31.0	11.2	0.0206	42.8
15.00	19.3	27.5	19.5	0.0138	27.5	11.8	0.0122	36.3
30.00	19.3	26.5	18.5	0.0138	26.5	11.9	0.0087	34.4
60.00	19.3	23.0	15.0	0.0138	23.0	12.5	0.0063	27.9
250.00	20.2	18.5	10.5	0.0136	18.5	13.3	0.0031	19.5
1440.00	18.0	14.5	6.5	0.0140	14.5	13.9	0.0014	12.1

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 2.1 (% coarse = % fine = 2.1)

SAND = 41.1 (% coarse = 1.0 % medium = 23.3 % fine = 16.8)

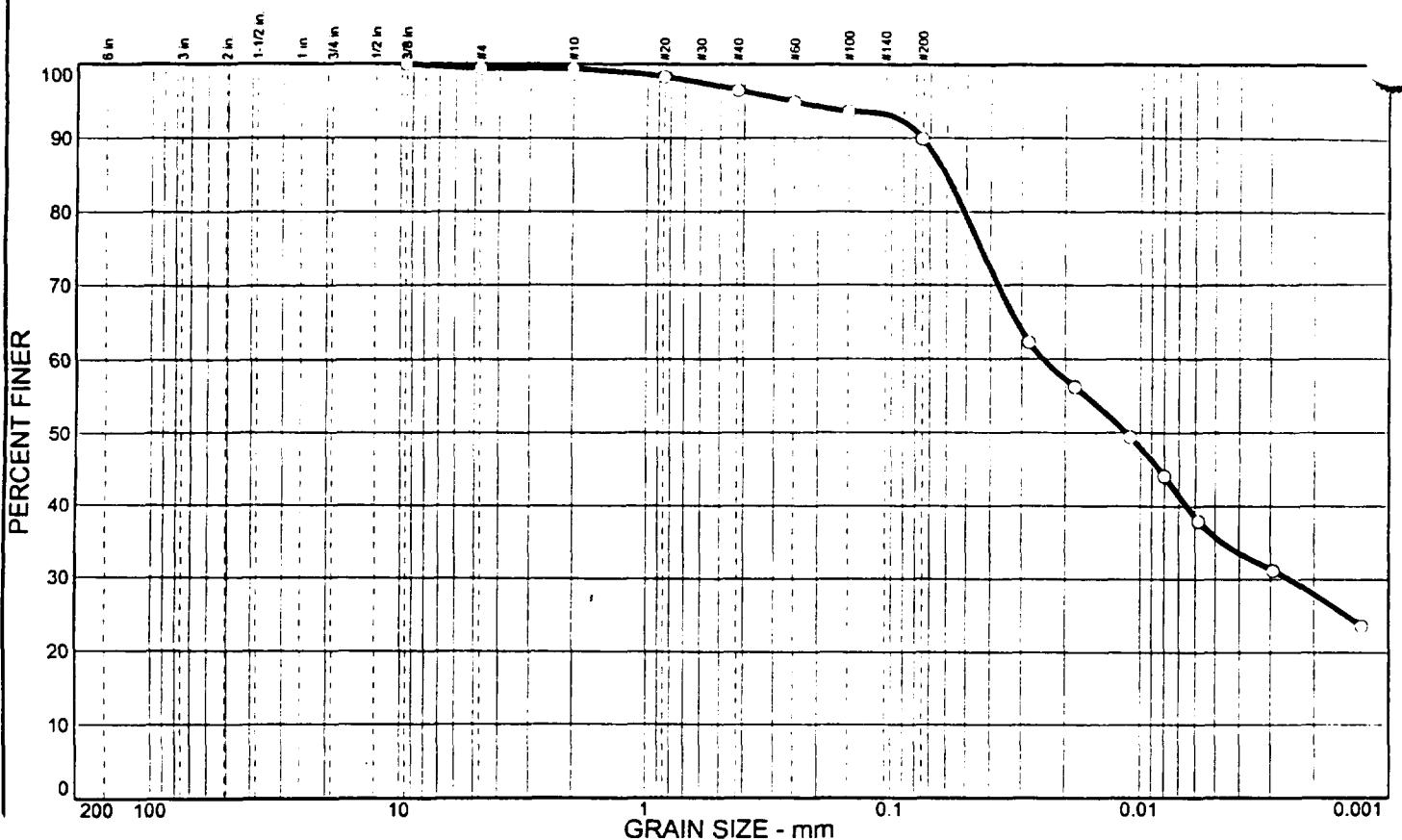
SILT = 32.7 % CLAY = 24.1

D₃₅= 0.93 D₆₀= 0.11 D₅₀= 0.04

D₁₀= 0.01 D₁₅= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-11
ample No.: FASED-CSC-S5W-0-26"
lev. or Depth:
ocation:
escription: SILT, LITTLE SAND
iquid Limit: - - -
GCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Weight sample and tare= 126.95
Tare = 0.00
Weight sample weight = 126.95
Sample split on number 10 sieve
Split sample data:
Sample and tare = 65.43 Tare = .00 Sample weight = 65.43
Cumulative weight retained tare= .00
for cumulative weight retained=.00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.74	99.4
# 10	0.77	99.4
# 20	0.75	98.3
# 40	1.88	96.5
# 60	2.98	94.9
# 100	3.82	93.6
# 200	6.28	89.9

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 99.4
Weight of hydrometer sample: 65.43
Calculated biased weight= 65.82
Table of composite correction values:
Temp, deg C: 19.0 20.5
Comp. corr: -8.0 -8.0

Miscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.6	49.0	41.0	0.0137	49.0	8.3	0.0279	62.3
5.00	19.6	45.0	37.0	0.0137	45.0	8.9	0.0183	56.2
15.00	19.7	40.5	32.5	0.0137	40.5	9.7	0.0110	49.4
30.00	19.7	37.0	29.0	0.0137	37.0	10.2	0.0080	44.1
60.00	20.0	33.0	25.0	0.0136	33.0	10.9	0.0058	38.0
250.00	20.5	28.5	20.5	0.0136	28.5	11.6	0.0029	31.2
1440.00	19.0	23.5	15.5	0.0138	23.5	12.4	0.0013	23.6

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.6 (% coarse = % fine = 0.6)

SAND = 9.5 (% coarse = 0.0 % medium = 2.9 % fine = 6.6)

SILT = 54.1 % CLAY = 35.8

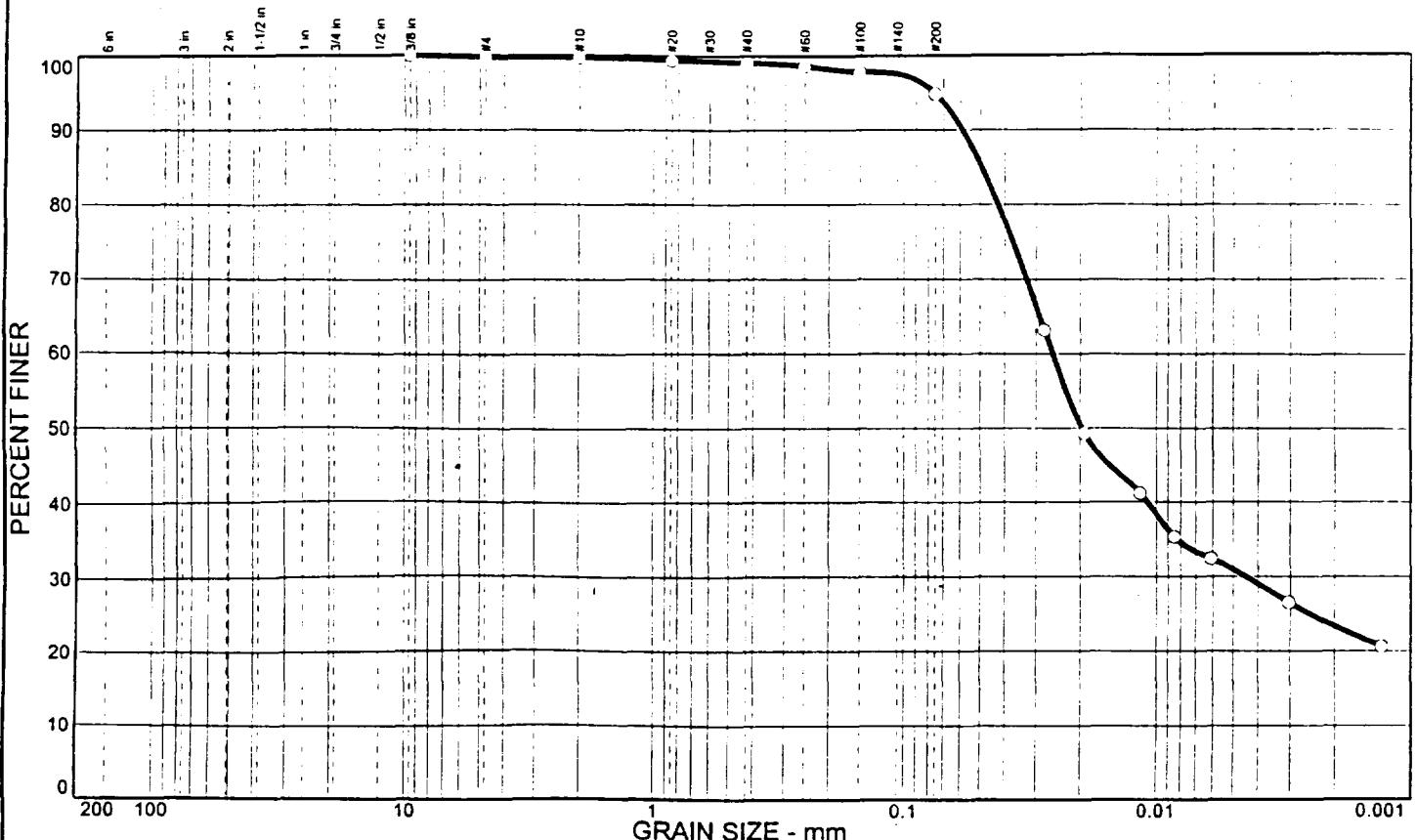
85= 0.06 D60= 0.02 D50= 0.01

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.2	5.0	63.9	30.9	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	99.8			○ SILT, TRACE SAND
GRAIN SIZE								
D ₆₀	0.0257			#10	99.7			
D ₃₀	0.0045			#20	99.4			
D ₁₀				#40	99.1			
COEFFICIENTS								
C _c				#60	98.6			
C _u				#100	97.8			
				#200	94.8			
REMARKS:								
○								

○ Source: COC-2

Sample No.: FASED-CSC-S6-0-26"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-69

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ject: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-2

ample No.: FASED-CSC-S6-0-26"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 205.41

are = 0.00

ry sample weight = 205.41

ample split on number 10 sieve

plit sample data:

Sample and tare = 67.80 Tare = .00 Sample weight = 67.80

Cumulative weight retained tare= .00

for cumulative weight retained=.00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.43	99.8
# 10	0.54	99.7
# 20	0.19	99.4
# 40	0.42	99.1
# 60	0.78	98.6
# 100	1.30	97.8
# 200	3.34	94.8

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.7

eight of hydrometer sample: 67.80

alculated biased weight= 68.00

able of composite correction values:

Temp, deg C: 20.0 17.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

specific gravity correction factor= 1.000

ometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.5	51.0	43.0	0.0139	51.0	7.9	0.0277	63.2
5.00	18.5	41.5	33.5	0.0139	41.5	9.5	0.0192	49.3
15.00	18.4	36.0	28.0	0.0139	36.0	10.4	0.0116	41.2
30.00	18.4	32.0	24.0	0.0139	32.0	11.0	0.0084	35.3
60.00	18.4	30.0	22.0	0.0139	30.0	11.4	0.0061	32.4
250.00	19.0	26.0	18.0	0.0138	26.0	12.0	0.0030	26.5
1440.00	18.6	22.0	14.0	0.0139	22.0	12.7	0.0013	20.6

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

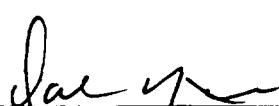
COBBLES = % GRAVEL = 0.2 (% coarse = % fine = 0.2)

SAND = 5.0 (% coarse = 0.1 % medium = 0.6 % fine = 4.3)

SILT = 63.9 % CLAY = 30.9

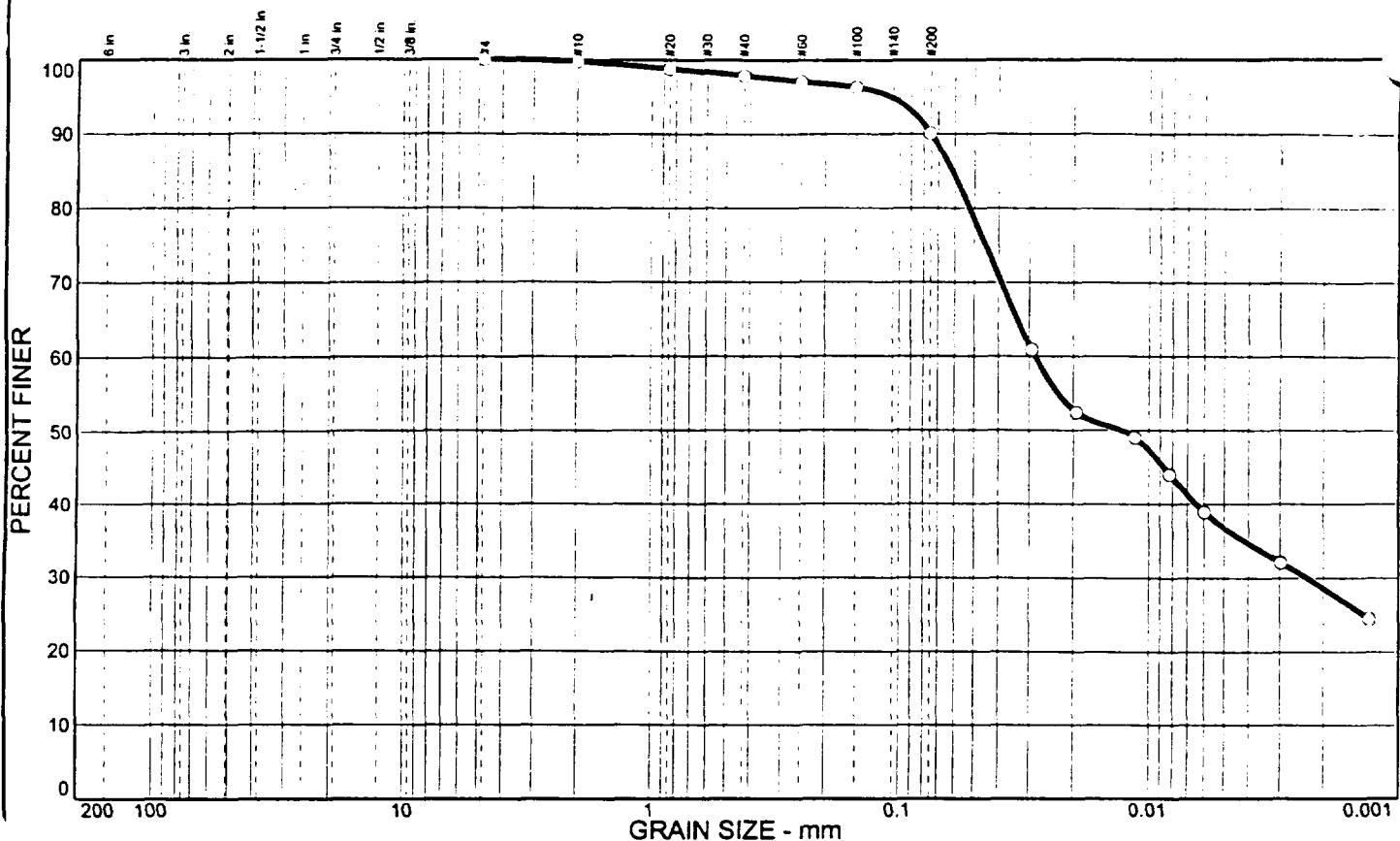
D5= 0.05 D60= 0.03 D50= 0.02

D0= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



SIEVE		PERCENT FINER		
inches	size	<input type="radio"/>		
GRAIN SIZE				
D ₆₀	0.0284			
D ₃₀	0.0023			
D ₁₀				
COEFFICIENTS				
C _c				
C _u				

SIEVE number size	PERCENT FINER		
	○	△	×
#4	100.0		
#10	99.8		
#20	98.8		
#40	97.9		
#60	97.1		
#100	96.3		
#200	90.1		

SOIL DESCRIPTION

REMARKS:

1

○ Source: COC-11

Sample No.: FASED-CSC-S7-0-26"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-72

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-11
ample No.: FASED-CSC-S7-0-26"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 113.57

are = 0.00

ry sample weight = 113.57

ample split on number 10 sieve

plit sample data:

Sample and tare = 59.02 Tare = .00 Sample weight = 59.02

Cumulative weight retained tare= .00

for cumulative weight retained= .00

ieve	Cumul. Wt. retained	Percent	
		finer	
# 4	0.00	100.0	
# 10	0.24	99.8	
# 20	0.59	98.8	
# 40	1.10	97.9	
# 60	1.60	97.1	
# 100	2.08	96.3	
# 200	5.74	90.1	

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.8
eight of hydrometer sample: 59.02
alculated biased weight= 59.14
able of composite correction values:
Temp, deg C: 18.0 20.5
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
-ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.3	44.0	36.0	0.0138	44.0	9.1	0.0293	60.9
5.00	19.3	39.0	31.0	0.0138	39.0	9.9	0.0194	52.4
15.00	19.2	37.0	29.0	0.0138	37.0	10.2	0.0114	49.0
30.00	19.3	34.0	26.0	0.0138	34.0	10.7	0.0082	44.0
60.00	19.2	31.0	23.0	0.0138	31.0	11.2	0.0060	38.9
250.00	20.3	27.0	19.0	0.0136	27.0	11.9	0.0030	32.1
1440.00	18.0	22.5	14.5	0.0140	22.5	12.6	0.0013	24.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 9.9 (% coarse = 0.2 % medium = 1.9 % fine = 7.8)

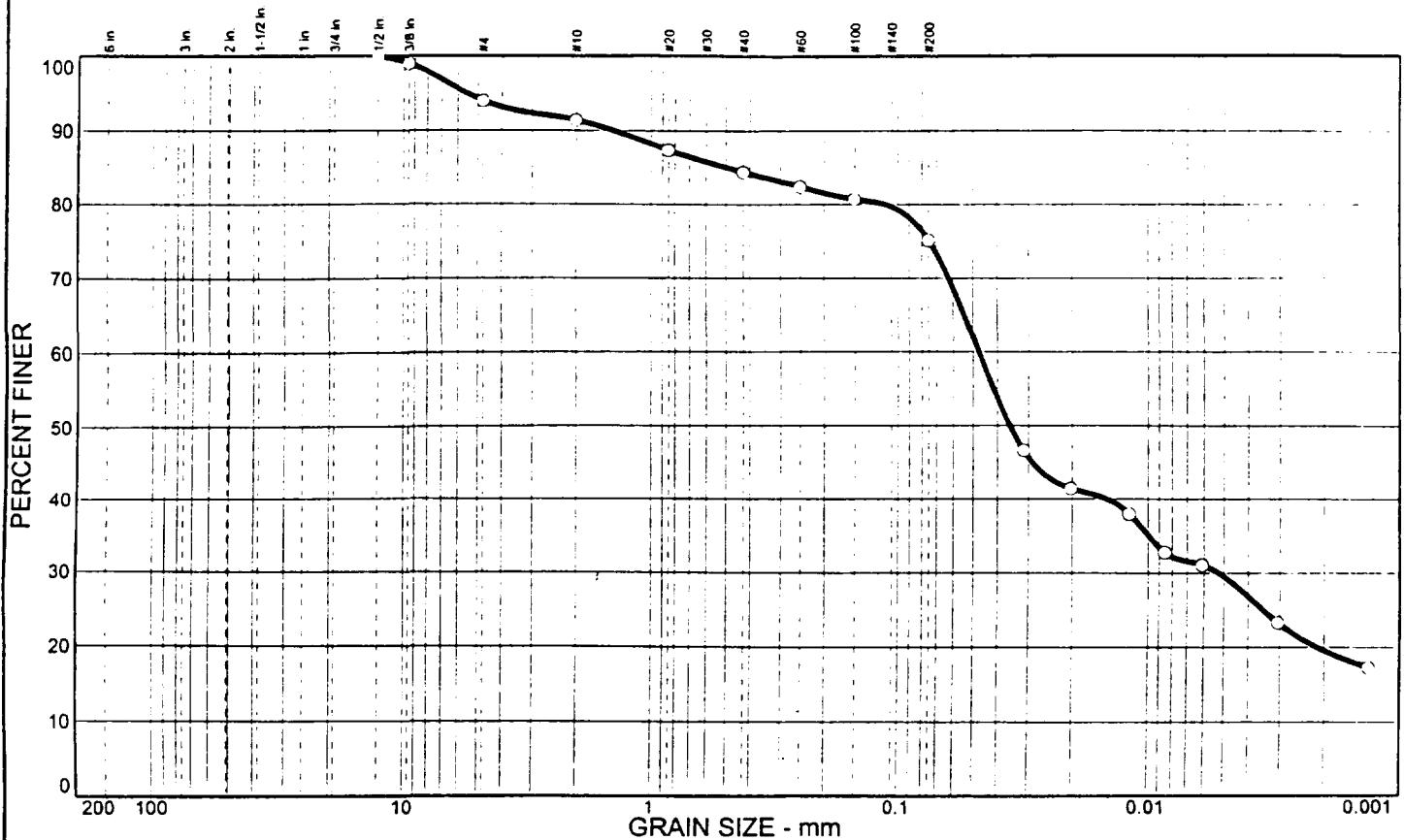
SILT = 53.3 % CLAY = 36.8

D₃₅ = 0.06 D₆₀ = 0.03 D₅₀ = 0.01

D₀ = 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	6.0	18.9	45.6	29.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0 99.0		
GRANULARITY GRAIN SIZE			
D ₆₀	0.0473		
D ₃₀	0.0052		
D ₁₀			
COHESION COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	94.0		
#10	91.4		
#20	87.4		
#40	84.4		
#60	82.4		
#100	80.7		
#200	75.1		

SOIL DESCRIPTION
○ SILT, WITH SAND
REMARKS:
○

○ Source: COC-6

Sample No.: FASED-CSC-S8-0-16"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-75

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

ient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

urce: COC-6

mple No.: FASED-CSC-S8-0-16"

ev. or Depth:

Sample Length (in./cm.):

cation:

scription: SILT, WITH SAND

quid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

sting Remarks:

Mechanical Analysis Data

Initial

y sample and tare= 77.41

re = 0.00

y sample weight = 77.41

mple split on number 10 sieve

lit sample data:

Sample and tare = 52.93 Tare = .00 Sample weight = 52.93

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
-------	------------------------	------------------

.5 inch	0.00	100.0
.375 inch	0.78	99.0
# 4	4.64	94.0
# 10	6.66	91.4
# 20	2.31	87.4
# 40	4.08	84.4
# 60	5.24	82.4
# 100	6.19	80.7
# 200	9.46	75.1

Hydrometer Analysis Data

paration sieve is #10

Percent -#10 based upon complete sample= 91.4

Weight of hydrometer sample: 52.93

Calculated biased weight= 57.91

Table of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

Discus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	35.0	27.0	0.0136	35.0	10.6	0.0313	46.6
5.00	20.2	32.0	24.0	0.0136	32.0	11.0	0.0202	41.4
15.00	20.2	30.0	22.0	0.0136	30.0	11.4	0.0119	38.0
30.00	20.2	27.0	19.0	0.0136	27.0	11.9	0.0086	32.8
60.00	20.2	26.0	18.0	0.0136	26.0	12.0	0.0061	31.1
250.00	20.9	21.5	13.5	0.0135	21.5	12.8	0.0030	23.3
1440.00	19.1	18.0	10.0	0.0138	18.0	13.3	0.0013	17.3

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 6.0 (% coarse = % fine = 6.0)

SAND = 18.9 (% coarse = 2.6 % medium = 7.0 % fine = 9.3)

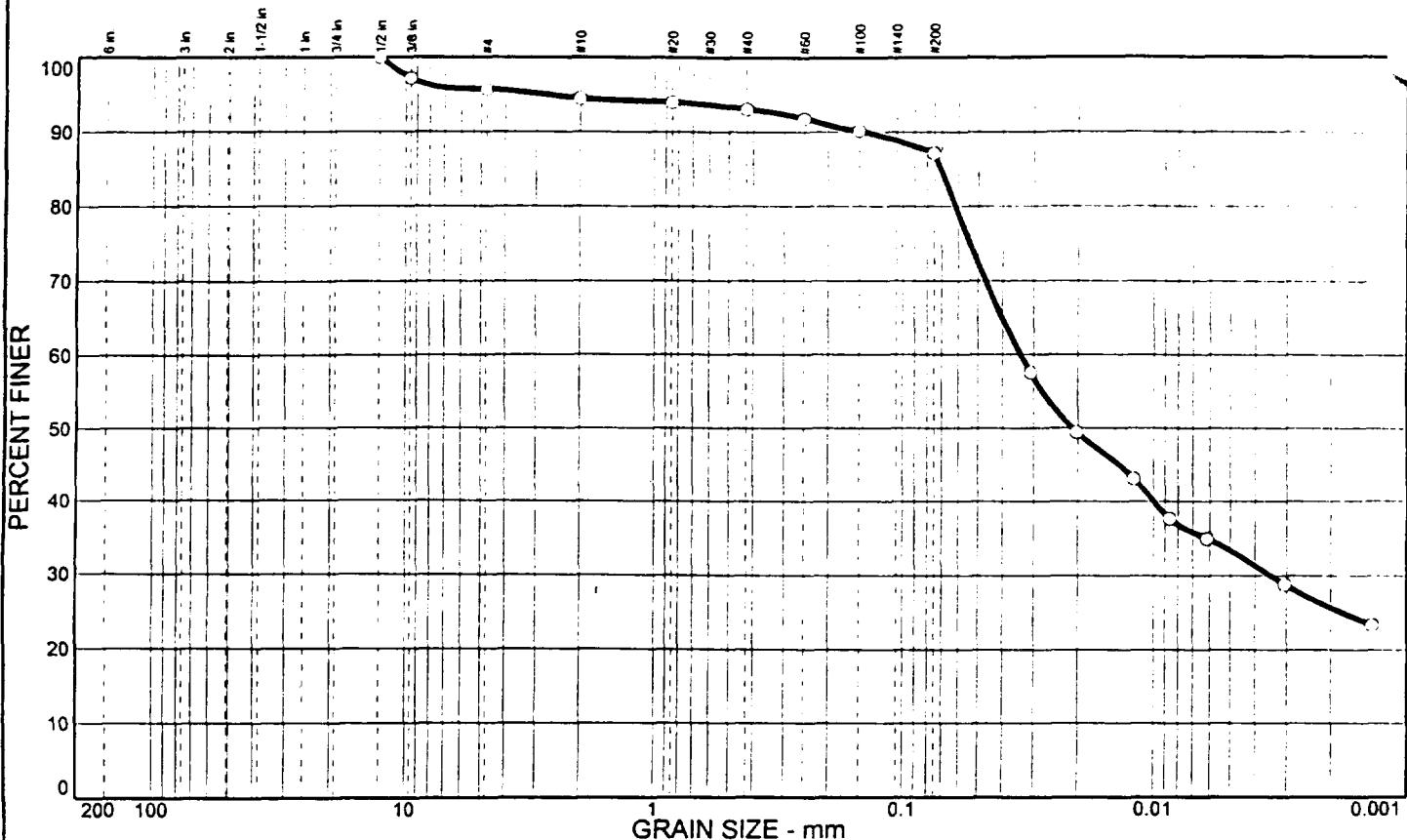
SILT = 45.6 % CLAY = 29.5

D₃₅ = 0.50 D₆₀ = 0.05 D₅₀ = 0.04

D₀ = 0.01

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	4.3	8.5	53.8	33.4	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.5 .375	100.0 97.2			#4	95.7			○ SILT, TRACE SAND
				#10	94.5			
				#20	94.0			
				#40	93.1			
				#60	91.8			
				#100	90.2			
				#200	87.2			
GRAIN SIZE								
D ₆₀	0.0339							
D ₃₀	0.0035							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								
REMARKS:								
○								

Source: COC-6

Sample No.: FASED-CSC-S9-0-27"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-78

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-6

ample No.: FASED-CSC-S9-0-27"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 96.00

are = 0.00

ry sample weight = 96.00

ample split on number 10 sieve

plit sample data:

Sample and tare = 52.59 Tare = .00 Sample weight = 52.59

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.5 inch	0.00	100.0
.375 inch	2.70	97.2
# 4	4.14	95.7
# 10	5.28	94.5
# 20	0.26	94.0
# 40	0.76	93.1
# 60	1.50	91.8
# 100	2.38	90.2
# 200	4.09	87.2

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 94.5

eight of hydrometer sample: 52.59

calculated biased weight= 55.65

able of composite correction values:

Temp, deg C: 15.5 19.5

Comp. corr: -8.0 -8.0

aniscus correction only= 0

ific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	40.0	32.0	0.0140	40.0	9.7	0.0308	57.5
5.00	18.2	35.5	27.5	0.0140	35.5	10.5	0.0202	49.4
15.00	18.4	32.0	24.0	0.0139	32.0	11.0	0.0119	43.1
30.00	18.4	29.0	21.0	0.0139	29.0	11.5	0.0086	37.7
60.00	18.8	27.5	19.5	0.0139	27.5	11.8	0.0061	35.0
250.00	19.5	24.0	16.0	0.0137	24.0	12.4	0.0031	28.8
1440.00	15.4	21.0	13.0	0.0145	21.0	12.9	0.0014	23.4

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 4.3 (% coarse = % fine = 4.3)

SAND = 8.5 (% coarse = 1.2 % medium = 1.4 % fine = 5.9)

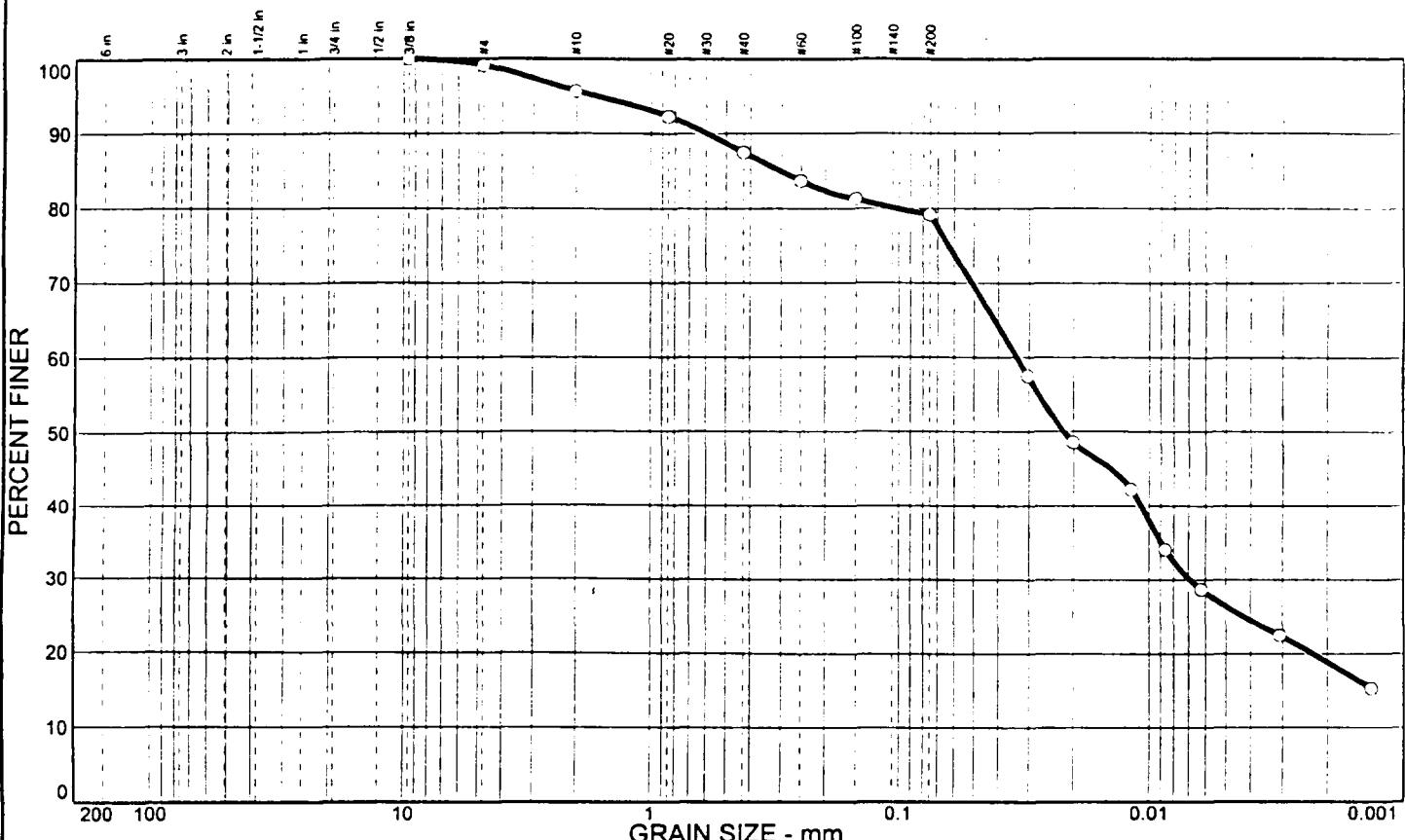
SILT = 53.8 % CLAY = 33.4

85= 0.07 D₆₀= 0.03 D₅₀= 0.02

30= 0.00

Cal Y.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.9	19.9	52.8	26.4	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0336		
D ₃₀	0.0069		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.1		
#10	95.7		
#20	92.3		
#40	87.5		
#60	83.7		
#100	81.3		
#200	79.2		

SOIL DESCRIPTION
 SILT, WITH SAND

REMARKS:

Source: COC-2

Sample No.: FASED-CSC-S10-0-28"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-81

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-2

ample No.: FASED-CSC-S10-0-28"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

sample and tare= 53.30

re = 0.00

sample weight = 53.30

ample split on number 10 sieve

plit sample data:

Sample and tare = 53.30 Tare = .00 Sample weight = 53.30

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve Cumul. Wt. Percent

retained finer

.375 inch 0.00 100.0

4 0.47 99.1

10 2.28 95.7

20 1.89 92.3

40 4.57 87.5

60 6.66 83.7

100 8.03 81.3

200 9.19 79.2

Hydrometer Analysis Data

paration sieve is #10

recent -#10 based upon complete sample= 95.7

ight of hydrometer sample: 53.30

culated biased weight= 55.69

ble of composite correction values:

Temp, deg C: 22.0 17.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

ecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

dometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.5	40.0	32.0	0.0137	40.0	9.7	0.0303	57.5
5.00	19.5	35.0	27.0	0.0137	35.0	10.6	0.0199	48.5
15.00	19.6	31.5	23.5	0.0137	31.5	11.1	0.0118	42.2
30.00	19.7	27.0	19.0	0.0137	27.0	11.9	0.0086	34.1
60.00	19.8	24.0	16.0	0.0137	24.0	12.4	0.0062	28.7
250.00	20.6	20.5	12.5	0.0135	20.5	12.9	0.0031	22.5
1440.00	19.1	16.5	8.5	0.0138	16.5	13.6	0.0013	15.3

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.9 (% coarse = % fine = 0.9)

SAND = 19.9 (% coarse = 3.4 % medium = 8.2 % fine = 8.3)

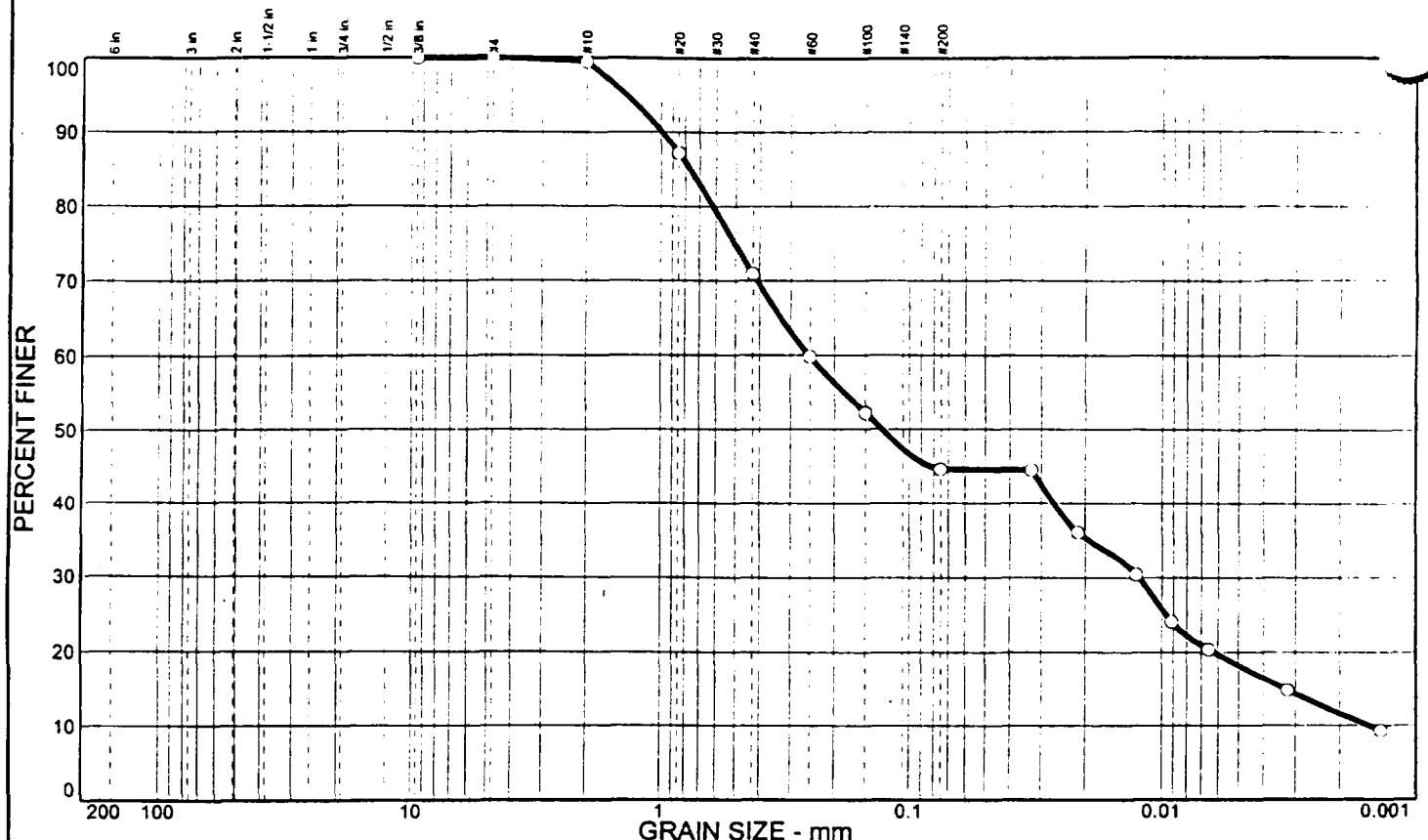
SILT = 52.8 % CLAY = 26.4

85= 0.30 D60= 0.03 D50= 0.02

30= 0.01

Don Ye
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		55.4	26.4	18.2	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILTY MEDIUM TO FINE SAND
	○				○			
.375	100.0			#4	100.0			
GRAIN SIZE								
D ₆₀	0.253			#10	99.5			
D ₃₀	0.0123			#20	87.2			
D ₁₀	0.0015			#40	70.9			
COEFFICIENTS								
C _c	0.39			#60	59.8			
C _u	163.54			#100	52.2			
				#200	44.6			
REMARKS:								
○								

○ Source: COC-2

Sample No.: FASED-CSC-S11-0-25"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-84

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-2
ample No.: FASED-CSC-S11-0-25"
lev. or Depth:
ocation:
escription: SILTY MEDIUM TO FINE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 71.35
re = 0.00
ry sample weight = 71.35
mple split on number 10 sieve
lit sample data:

Sample and tare = 72.96 Tare = .00 Sample weight = 72.96

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.36	99.5
# 20	9.03	87.2
# 40	20.95	70.9
# 60	29.11	59.8
# 100	34.68	52.2
# 200	40.24	44.6

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 99.5
ight of hydrometer sample: 53.68
lculated biased weight= 53.95
ble of composite correction values:
Temp, deg C: 20.0 17.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
meter type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.4	32.0	24.0	0.0139	32.0	11.0	0.0327	44.5
5.00	18.5	27.5	19.5	0.0139	27.5	11.8	0.0213	36.1
15.00	18.4	24.4	16.4	0.0139	24.4	12.3	0.0126	30.4
30.00	18.3	21.0	13.0	0.0139	21.0	12.9	0.0091	24.1
60.00	18.4	19.0	11.0	0.0139	19.0	13.2	0.0065	20.4
250.00	19.1	16.0	8.0	0.0138	16.0	13.7	0.0032	14.8
1440.00	18.6	13.0	5.0	0.0139	13.0	14.2	0.0014	9.3

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 55.4 (% coarse = 0.5 % medium = 28.6 % fine = 26.3)

SILT = 26.4 % CLAY = 18.2

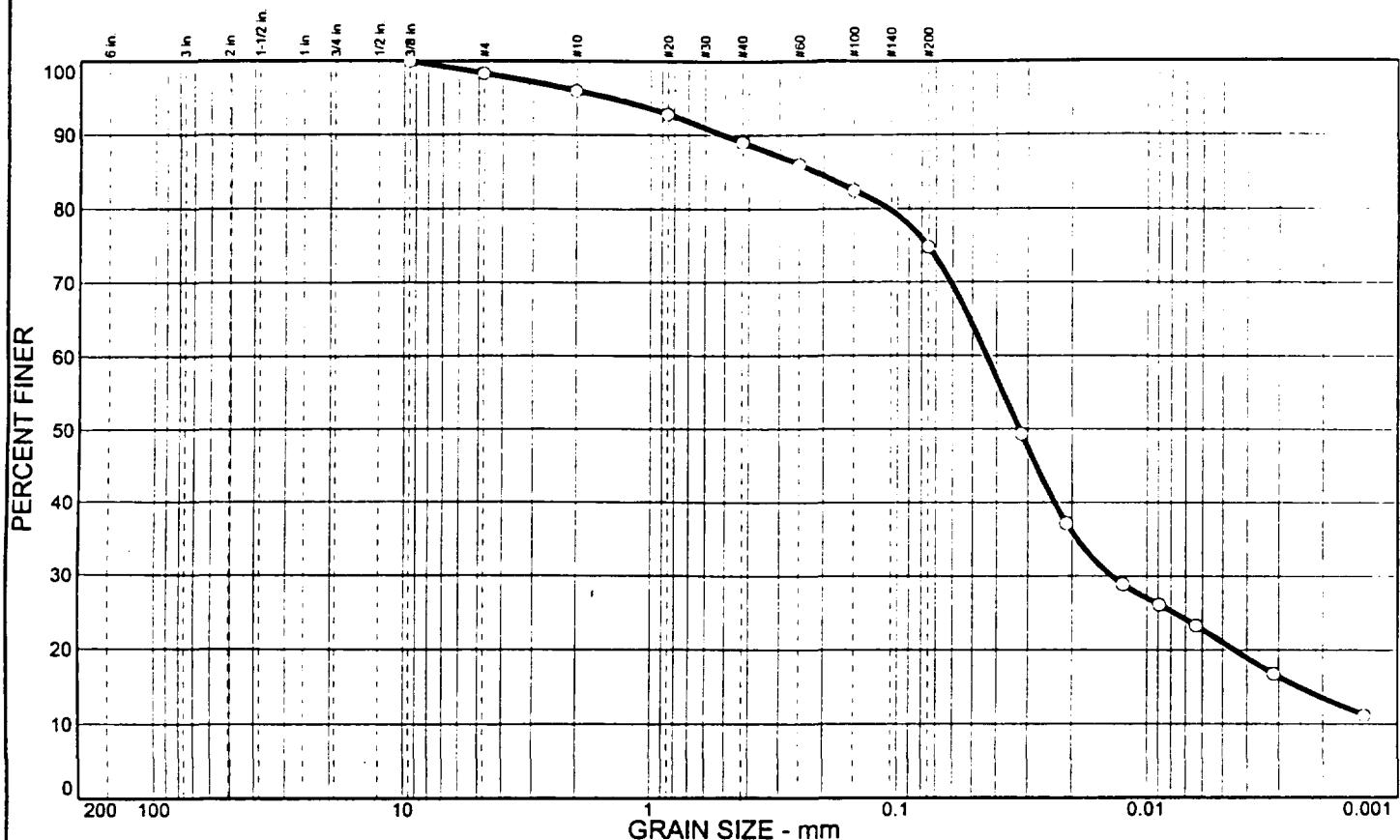
D₅= 0.77 D₆₀= 0.25 D₅₀= 0.13

D₃₀= 0.01 D₁₅= 0.00 D₁₀= 0.00

C_u= 0.3876 C_u= 163.5432

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.7	23.5	53.7	21.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0437		
D ₃₀	0.0138		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	98.3		
#10	96.0		
#20	92.8		
#40	89.0		
#60	86.0		
#100	82.5		
#200	74.8		

SOIL DESCRIPTION
 SILT, WITH SAND

REMARKS:

○ Source: COC-2

Sample No.: FASED-CSC-S12E-0-18"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-87

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Object Number: 1999-00-0774

Sample Data

Source: COC-2

Sample No.: FASED-CSC-S12E-0-18"

Lev. or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 132.28

tare = 0.00

dry sample weight = 132.28

sample split on number 10 sieve

Split sample data:

Sample and tare = 51.56 Tare = .00 Sample weight = 51.56

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	2.26	98.3
# 10	5.32	96.0
# 20	1.70	92.8
# 40	3.75	89.0
# 60	5.37	86.0
# 100	7.24	82.5
# 200	11.41	74.8

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 96.0

Weight of hydrometer sample: 51.56

Calculated biased weight= 53.71

Table of composite correction values:

Temp, deg C: 22.0 17.0

Comp. corr: -8.0 -8.0

Iniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.5	34.5	26.5	0.0137	34.5	10.6	0.0317	49.3
5.00	19.6	28.0	20.0	0.0137	28.0	11.7	0.0210	37.2
15.00	19.7	23.5	15.5	0.0137	23.5	12.4	0.0125	28.9
30.00	19.8	22.0	14.0	0.0137	22.0	12.7	0.0089	26.1
60.00	19.9	20.5	12.5	0.0137	20.5	12.9	0.0063	23.3
250.00	21.0	17.0	9.0	0.0135	17.0	13.5	0.0031	16.8
1440.00	19.2	14.0	6.0	0.0138	14.0	14.0	0.0014	11.2

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 1.7 (% coarse = % fine = 1.7)

SAND = 23.5 (% coarse = 2.3 % medium = 7.0 % fine = 14.2)

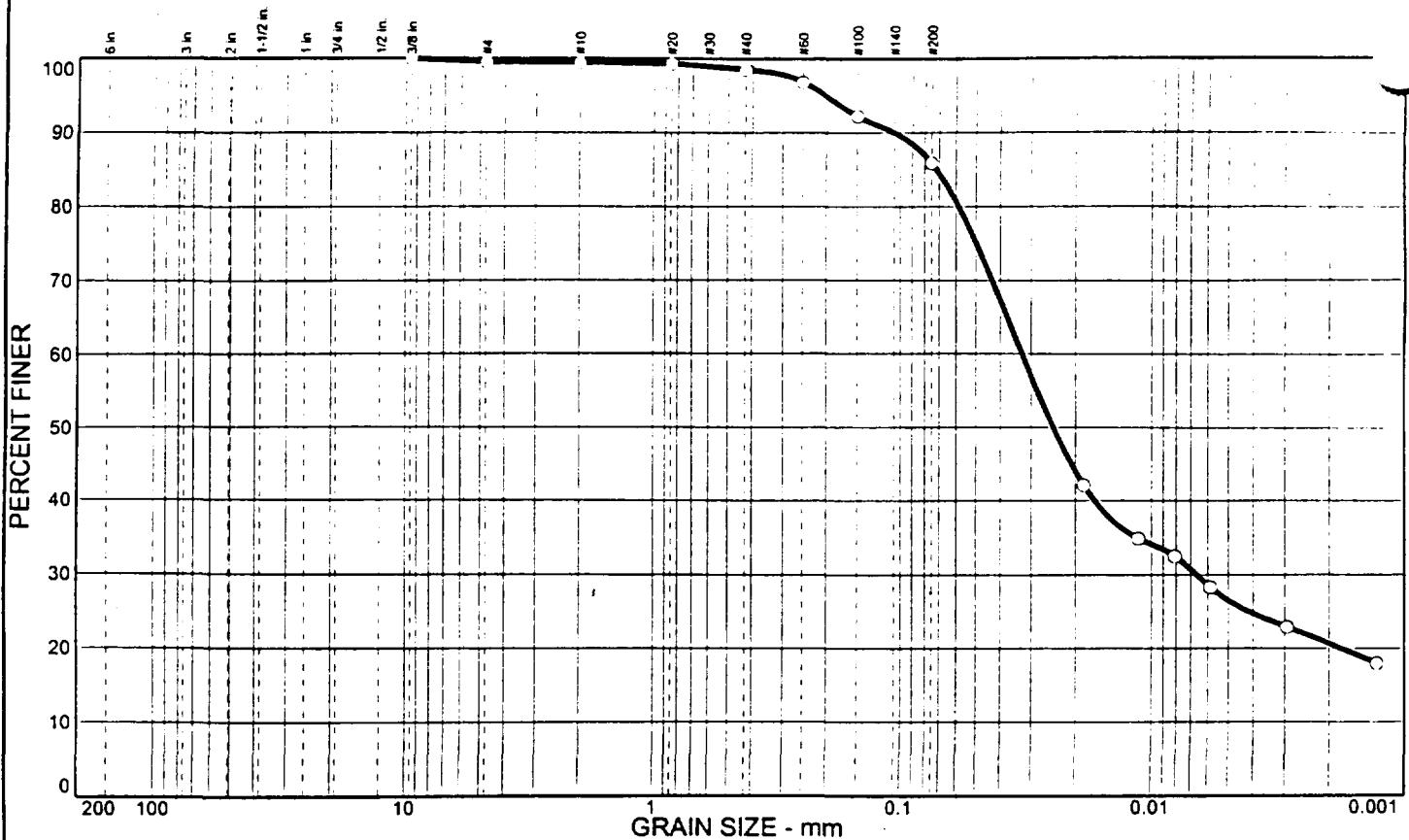
SILT = 53.7 % CLAY = 21.1

D₃₅= 0.21 D₆₀= 0.04 D₅₀= 0.03

D₃₀= 0.01 D₁₅= 0.00

Jae YC
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.5	13.6	59.4	26.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
<hr/>			
GRAIN SIZE			
D ₆₀	0.0326		
D ₃₀	0.0066		
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-2

SIEVE number size	PERCENT FINER		
	○		
#4	99.5		
#10	99.4		
#20	99.3		
#40	98.5		
#60	96.8		
#100	92.2		
#200	85.9		

SOIL DESCRIPTION

○ SILT, LITTLE SAND

REMARKS:

○

Sample No.: FASED-CSD-S1W-0-24"

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-90

Plate

Thompson Engineering

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-2

ample No.: FASED-CSD-S1W-0-24"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

Liquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 183.78

re = 0.00

ry sample weight = 183.78

ample split on number 10 sieve

plit sample data:

Sample and tare = 82.66 Tare = .00 Sample weight = 82.66

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.86	99.5
# 10	1.19	99.4
# 20	0.12	99.3
# 40	0.78	98.5
# 60	2.19	96.8
# 100	5.99	92.2
# 200	11.23	85.9

Hydrometer Analysis Data

paration sieve is #10

recent -#10 based upon complete sample= 99.4

ight of hydrometer sample: 82.66

calculated biased weight= 83.16

ble of composite correction values:

Temp, deg C: 21.0 17.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

pecific gravity of solids= 2.65

specific gravity correction factor= 1.000

ometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	201.0	53.0	45.0	0.0391	53.0	7.6	0.0763	54.1
5.00	20.2	43.0	35.0	0.0136	43.0	9.2	0.0185	42.1
15.00	20.2	37.0	29.0	0.0136	37.0	10.2	0.0112	34.9
30.00	20.2	35.0	27.0	0.0136	35.0	10.6	0.0081	32.5
60.00	20.2	31.5	23.5	0.0136	31.5	11.1	0.0059	28.3
250.00	20.9	27.0	19.0	0.0135	27.0	11.9	0.0029	22.9
1440.00	19.1	23.0	15.0	0.0138	23.0	12.5	0.0013	18.0

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 0.5 (% coarse = % fine = 0.5)

SAND = 13.6 (% coarse = 0.1 % medium = 0.9 % fine = 12.6)

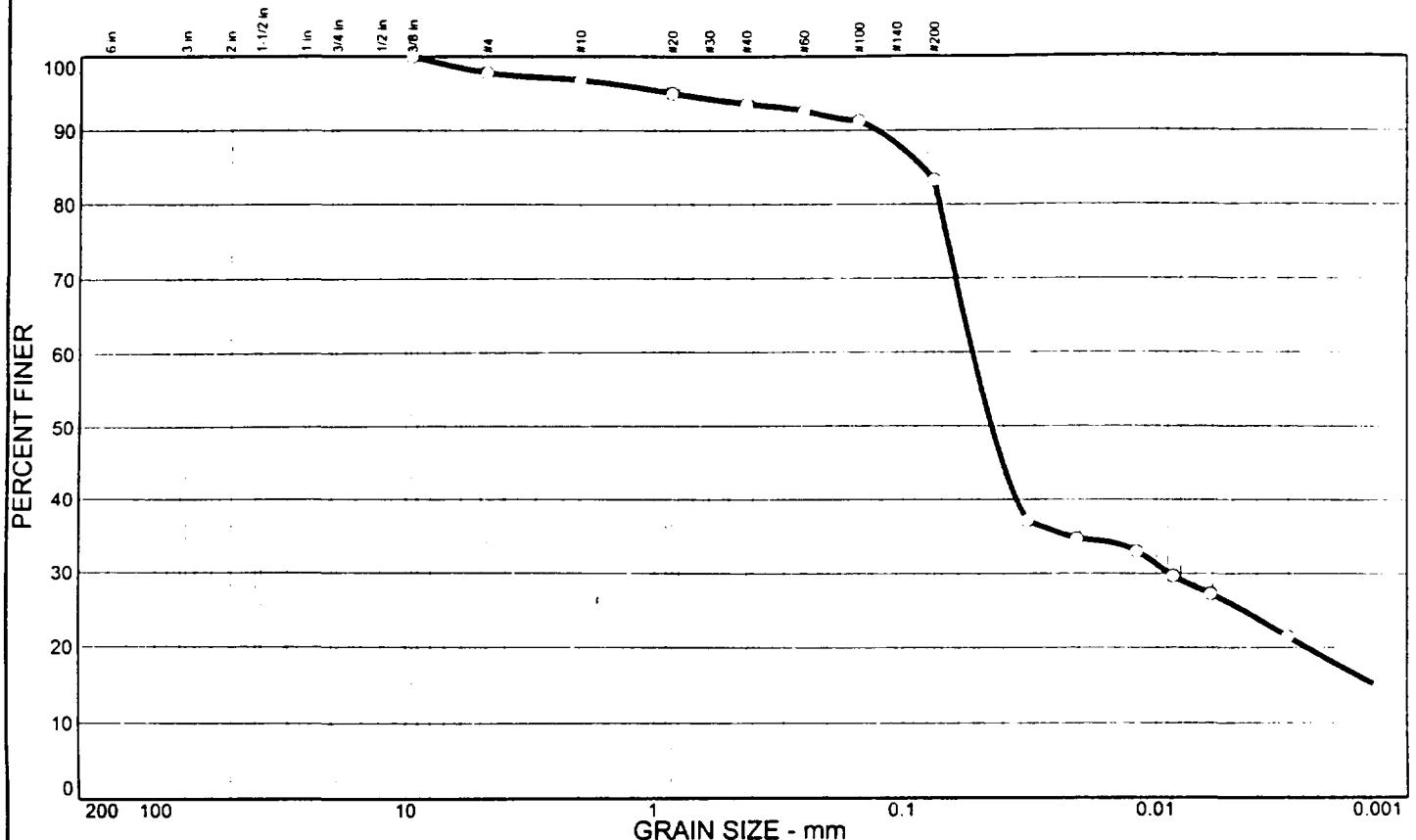
SILT = 59.4 % CLAY = 26.5

D₃₅ = 0.07 D₆₀ = 0.03 D₅₀ = 0.02

D₁₀ = 0.01

Jay
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	2.2	14.5	57.5	25.8	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	#4	#10	#20		#40	#60	#100	
.375	100.0			#4	97.8			SILT, WITH SAND
				#10	96.8			
				#20	95.0			
				#40	93.6			
				#60	92.6			
				#100	91.3			
				#200	83.3			
GRAIN SIZE								
D ₆₀	0.0528							
D ₃₀	0.0088							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

Source: COC-7

Sample No.: FASED-CSD-S2-0-15"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC.
	Project: SOLUTIA SAUGET AREA 1 PROJECT
	Project No.: 1999-00-0774
	Plate 267A-93

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-7

Sample No.: FASED-CSD-S2-0-15"

Elev. or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

USCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Dry sample and tare = 131.81

Tare = 0.00

Dry sample weight = 131.81

Sample split on number 10 sieve

Split sample data:

Sample and tare = 58.61 Tare = .00 Sample weight = 58.61

Cumulative weight retained tare = .00

% for cumulative weight retained = .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	2.96	97.8
# 10	4.28	96.8
# 20	1.08	95.0
# 40	1.92	93.6
# 60	2.57	92.6
# 100	3.35	91.3
# 200	8.19	83.3

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 96.8

Weight of hydrometer sample: 58.61

Calculated biased weight= 60.55

Table of composite correction values:

Temp, deg C: 20.5 21.5

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.7	30.5	22.5	0.0135	30.5	11.3	0.0321	37.2
5.00	20.7	29.0	21.0	0.0135	29.0	11.5	0.0205	34.7
15.00	20.7	28.0	20.0	0.0135	28.0	11.7	0.0119	33.0
30.00	20.8	26.0	18.0	0.0135	26.0	12.0	0.0086	29.7
60.00	21.0	24.5	16.5	0.0135	24.5	12.3	0.0061	27.3
250.00	21.5	21.0	13.0	0.0134	21.0	12.9	0.0030	21.5
1440.00	21.1	17.0	9.0	0.0135	17.0	13.5	0.0013	14.9

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

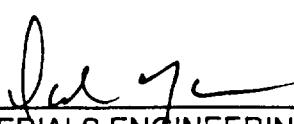
COBBLES = % GRAVEL = 2.2 (% coarse = % fine = 2.2)

SAND = 14.5 (% coarse = 1.0 % medium = 3.2 % fine = 10.3)

SILT = 57.5 % CLAY = 25.8

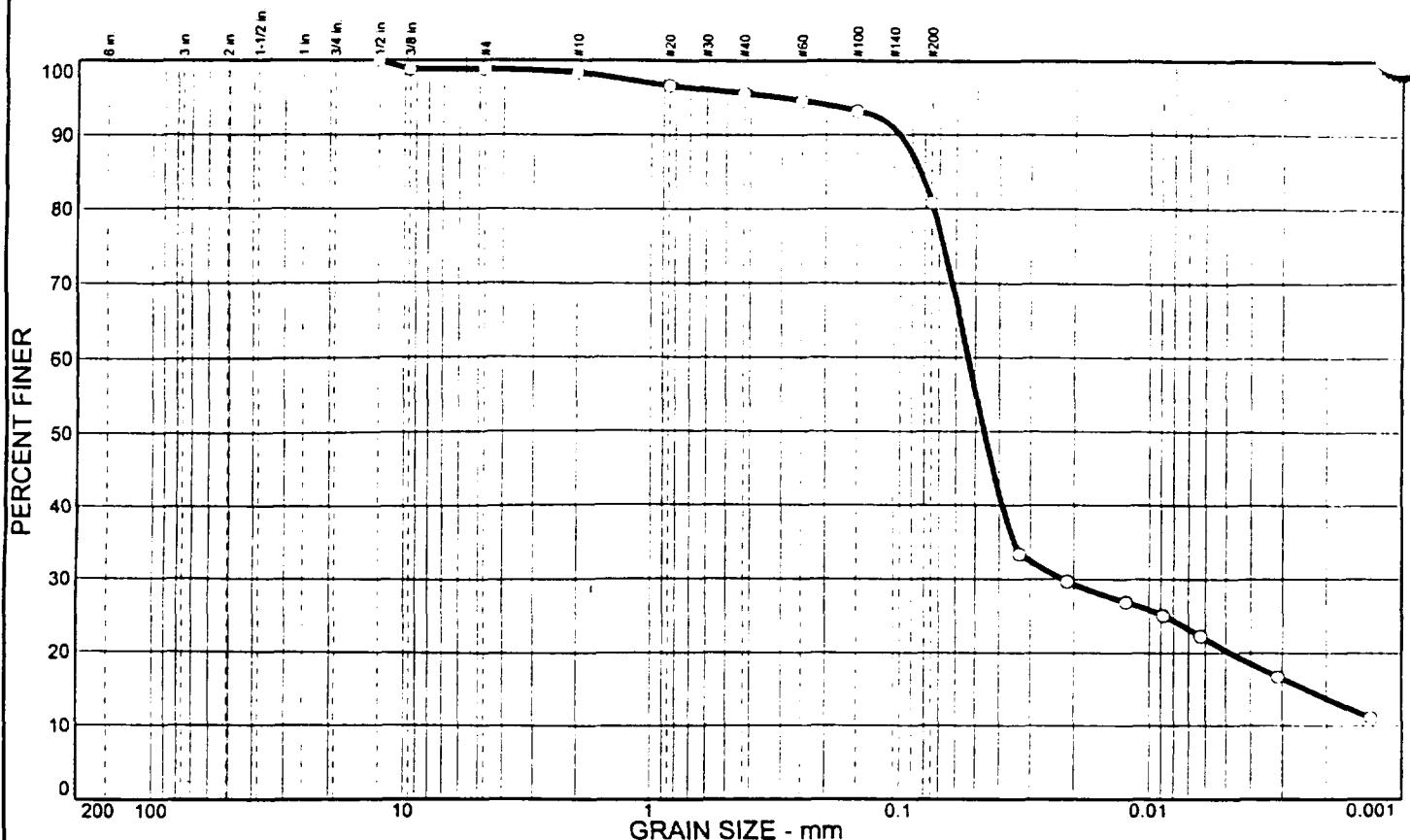
85= 0.08 D60= 0.05 D50= 0.04

30= 0.01 D15= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.2	18.0	60.4	20.4	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0 98.8		
GRAIN SIZE			
D ₆₀	0.0533		
D ₃₀	0.0222		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	98.8		
#10	98.4		
#20	96.6		
#40	95.6		
#60	94.6		
#100	93.2		
#200	80.8		

SOIL DESCRIPTION
 SILT, WITH SAND

REMARKS:

○ Source: COC-7

Sample No.: FASED-CSD-S3-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-96

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-7
ample No.: FASED-CSD-S3-0-21"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
y sample and tare= 179.04
re = 0.00
y sample weight = 179.04
mple split on number 10 sieve
plit sample data:
Sample and tare = 53.04 Tare = .00 Sample weight = 53.04
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.5 inch	0.00	100.0
.375 inch	2.07	98.8
# 4	2.07	98.8
# 10	2.95	98.4
# 20	0.96	96.6
# 40	1.52	95.6
# 60	2.07	94.6
# 100	2.80	93.2
# 200	9.50	80.8

Hydrometer Analysis Data

paration sieve is #10
recent -#10 based upon complete sample= 98.4
ight of hydrometer sample: 53.04
lculated biased weight= 53.90
ble of composite correction values:
Temp, deg C: 20.5 21.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
ific gravity of solids= 2.65
ific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.8	26.0	18.0	0.0135	26.0	12.0	0.0331	33.4
5.00	20.8	24.0	16.0	0.0135	24.0	12.4	0.0212	29.7
15.00	20.9	22.5	14.5	0.0135	22.5	12.6	0.0124	26.9
30.00	20.9	21.5	13.5	0.0135	21.5	12.8	0.0088	25.1
60.00	21.0	20.0	12.0	0.0135	20.0	13.0	0.0063	22.3
250.00	21.5	17.0	9.0	0.0134	17.0	13.5	0.0031	16.7
1440.00	21.1	14.0	6.0	0.0135	14.0	14.0	0.0013	11.1

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 1.2 (% coarse = % fine = 1.2)

SAND = 18.0 (% coarse = 0.4 % medium = 2.8 % fine = 14.8)

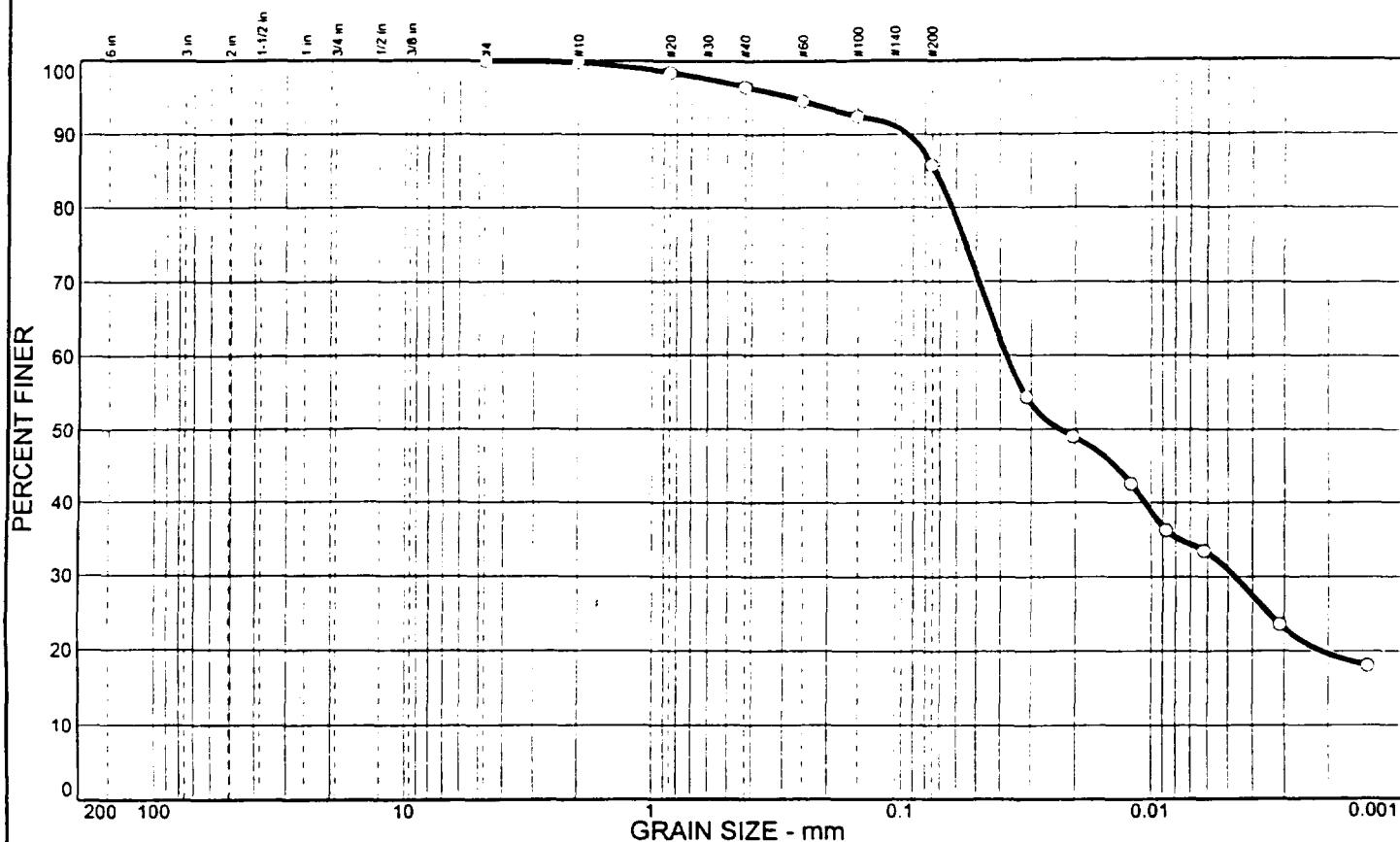
SILT = 60.4 % CLAY = 20.4

D5= 0.08 D60= 0.05 D50= 0.05

D30= 0.02 D15= 0.00

Dalrymple
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		14.2	54.8	31.0	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION								
	○				○											
				#4	100.0			○ SILT, LITTLE SAND								
				#10	99.8											
				#20	98.4											
				#40	96.5											
				#60	94.6											
				#100	92.5											
				#200	85.8											
GRAIN SIZE																
D ₆₀	0.0378															
D ₃₀	0.0047															
D ₁₀																
COEFFICIENTS																
C _c																
C _u																

Source: COC-1

Sample No.: FASED-CSD-S4-0-23"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIUM SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-99

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
-ject Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSD-S4-0-23"
lev. or Depth:
ocation:
escription: SILT, LITTLE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
ry sample and tare= 145.78
are = 0.00
ry sample weight = 145.78
ample split on number 10 sieve
plit sample data:
Sample and tare = 55.04 Tare = .00 Sample weight = 55.04
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.24	99.8
# 20	0.79	98.4
# 40	1.84	96.5
# 60	2.87	94.6
# 100	4.05	92.5
# 200	7.74	85.8

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.8
eight of hydrometer sample: 55.04
alculated biased weight= 55.15
able of composite correction values:
Temp, deg C: 15.4 19.5
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
rometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.1	38.0	30.0	0.0140	38.0	10.1	0.0313	54.4
5.00	18.1	35.0	27.0	0.0140	35.0	10.6	0.0203	49.0
15.00	18.3	31.5	23.5	0.0139	31.5	11.1	0.0120	42.6
30.00	18.6	28.0	20.0	0.0139	28.0	11.7	0.0087	36.3
60.00	18.9	26.5	18.5	0.0138	26.5	11.9	0.0062	33.5
250.00	19.5	21.0	13.0	0.0137	21.0	12.9	0.0031	23.6
1440.00	15.4	18.0	10.0	0.0145	18.0	13.3	0.0014	18.1

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 14.2 (% coarse = 0.2 % medium = 3.3 % fine = 10.7)

SILT = 54.8 % CLAY = 31.0

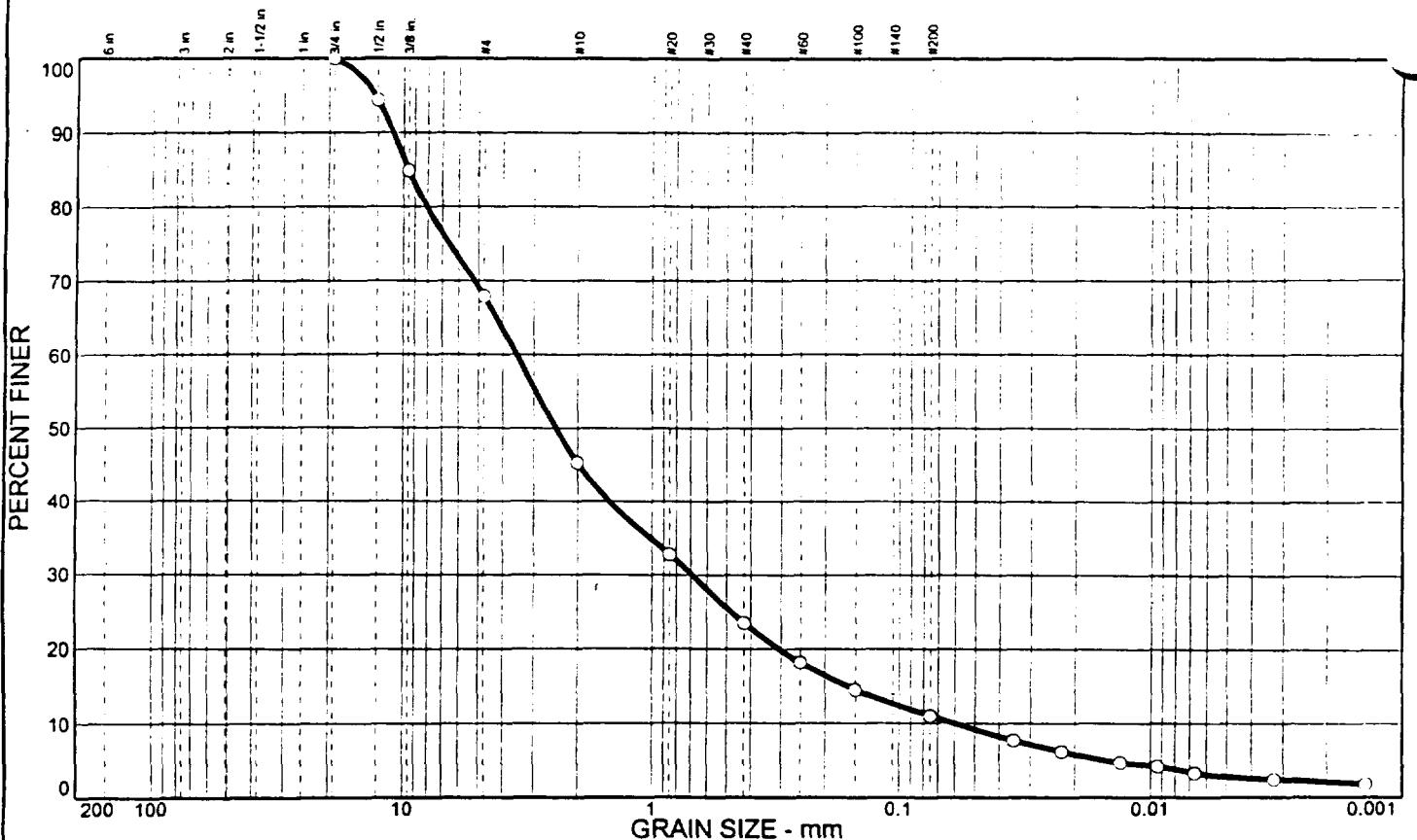
85= 0.07 D60= 0.04 D50= 0.02

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



SIEVE		PERCENT FINER		
inches size		O		
.75	100.0			
.5	94.4			
.375	84.9			

		GRAIN SIZE		
D ₆₀	3.52			
D ₃₀	0.690			
D ₁₀	0.0602			

		COEFFICIENTS		
C _c	2.25			
C _u	58.39			

SIEVE number size	PERCENT FINER		
	O		
#4	67.9		
#10	45.3		
#20	32.8		
#40	23.5		
#60	18.2		
#100	14.5		
#200	11.0		

SOIL DESCRIPTION

O COARSE TO FINE SAND, WITH GRAVEL

REMARKS:

C

© Source: COC-11

Sample No.: FASED-CSD-S5-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-102

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-11
Sample No.: FASED-CSD-S5-0-10"
Level or Depth: Sample Length (in./cm.):
Location:
Description: COARSE TO FINE SAND, WITH GRAVEL
Liquid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 225.35
tare = 0.00
dry sample weight = 225.35
sample split on number 10 sieve
listed sample data:
Sample and tare = 76.46 Tare = .00 Sample weight = 76.46
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.75 inch	0.00	100.0
.5 inch	12.58	94.4
.375 inch	34.10	84.9
# 4	72.41	67.9
# 10	123.26	45.3
# 20	21.14	32.8
# 40	36.83	23.5
# 60	45.75	18.2
# 100	52.06	14.5
# 200	57.91	11.0

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 45.3
Weight of hydrometer sample: 76.46
Calculated biased weight= 168.79
Table of composite correction values:
Temp, deg C: 18.0 20.5
Comp. corr: -8.0 -8.0

Focus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

267A-103

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.4	21.0	13.0	0.0137	21.0	12.9	0.0348	7.7
5.00	19.3	18.5	10.5	0.0138	18.5	13.3	0.0224	6.2
15.00	19.4	16.0	8.0	0.0137	16.0	13.7	0.0131	4.7
30.00	19.3	15.0	7.0	0.0138	15.0	13.8	0.0093	4.2
60.00	19.3	13.5	5.5	0.0138	13.5	14.1	0.0067	3.3
250.00	20.3	12.0	4.0	0.0136	12.0	14.3	0.0033	2.4
1440.00	18.0	11.0	3.0	0.0140	11.0	14.5	0.0014	1.8

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 32.1 (% coarse = % fine = 32.1)

SAND = 56.9 (% coarse = 22.6 % medium = 21.8 % fine = 12.5)

SILT = 8.2 % CLAY = 2.8

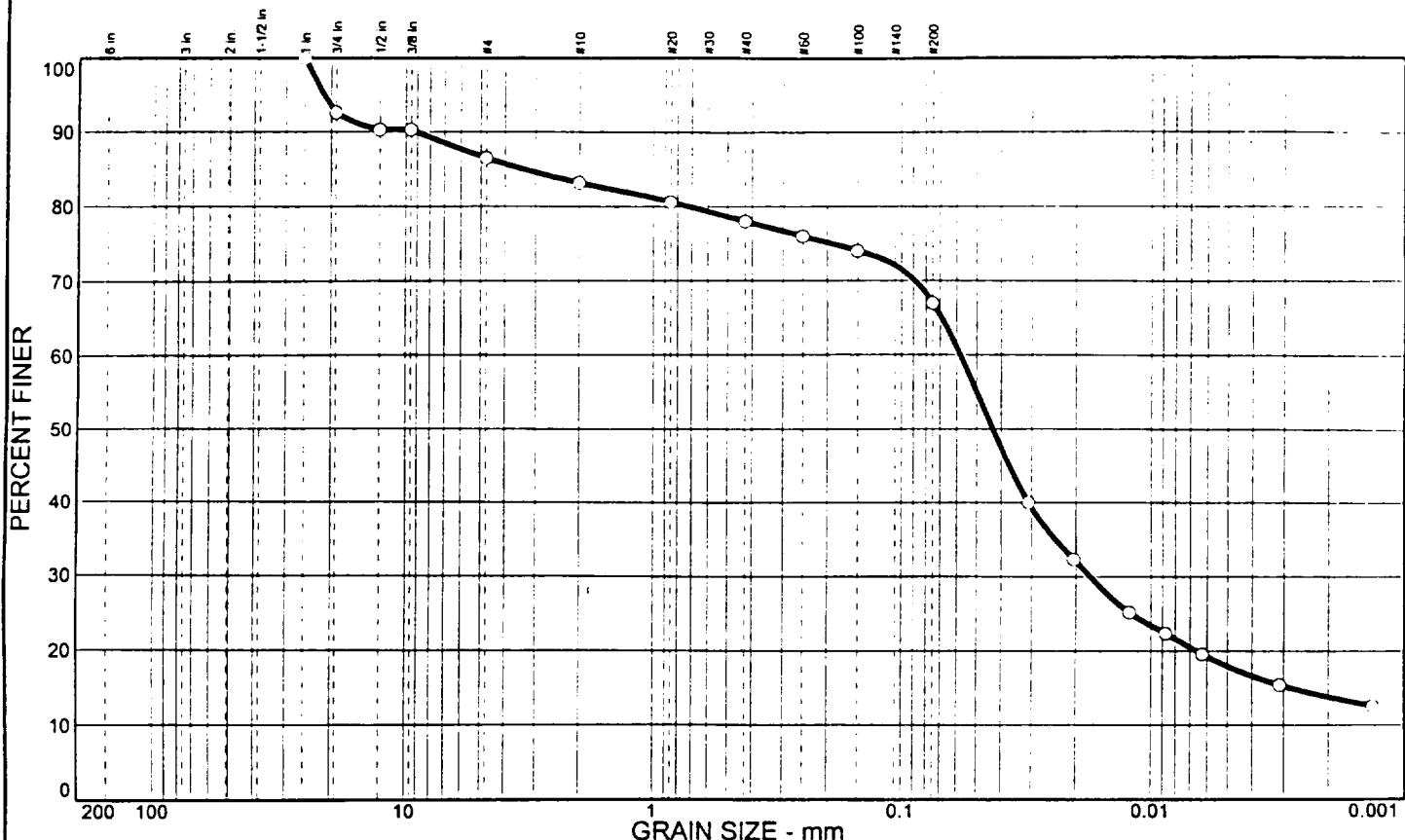
85= 9.55 D₆₀= 3.52 D₅₀= 2.44

30= 0.69 D₁₅= 0.16 D₁₀= 0.06

c= 2.2474 C_u= 58.3889

Dee
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	13.5	19.5	49.0	18.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
1	100.0		
.75	92.6		
.5	90.3		
.375	90.3		

GRAIN SIZE			
D ₆₀	D ₃₀	D ₁₀	
0.0581	0.0175		

COEFFICIENTS			
C _c			

SIEVE number size	PERCENT FINER		
	○		
#4	86.5		
#10	83.2		
#20	80.6		
#40	78.0		
#60	76.0		
#100	74.0		
#200	67.0		

SOIL DESCRIPTION

○ FINE SANDY SILT

REMARKS:

○

○ Source: COC-5

Sample No.: FASED-CSD-S6E-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-105

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-5
ample No.: FASED-CSD-S6E-0-13"
lev. or Depth:
ocation:
escription: FINE SANDY SILT
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
ry sample and tare= 192.93
ire = 0.00
ry sample weight = 192.93
mple split on number 10 sieve
lit sample data:

Sample and tare = 59.34 Tare = .00 Sample weight = 59.34

Cumulative weight retained tare= .00

for cumulative weight retained=.00

Sieve	Cumul. Wt.	Percent
	retained	finer
1 inch	0.00	100.0
.75 inch	14.37	92.6
.5 inch	18.71	90.3
.375 inch	18.71	90.3
# 4	26.08	86.5
# 10	32.41	83.2
# 20	1.85	80.6
# 40	3.70	78.0
# 60	5.11	76.0
# 100	6.59	74.0
# 200	11.57	67.0

Hydrometer Analysis Data

paration sieve is #10
recent -#10 based upon complete sample= 83.2
ight of hydrometer sample: 59.34
lculated biased weight= 71.32
ble of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

scus correction only= 0
pecific gravity of solids= 2.65
ecific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

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Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	36.5	28.5	0.0136	36.5	10.3	0.0309	40.0
5.00	20.2	31.0	23.0	0.0136	31.0	11.2	0.0204	32.3
15.00	20.2	26.0	18.0	0.0136	26.0	12.0	0.0122	25.2
30.00	20.2	24.0	16.0	0.0136	24.0	12.4	0.0087	22.4
60.00	20.2	22.0	14.0	0.0136	22.0	12.7	0.0063	19.6
250.00	20.8	19.0	11.0	0.0135	19.0	13.2	0.0031	15.4
1440.00	19.1	17.0	9.0	0.0138	17.0	13.5	0.0013	12.6

Fractional Components

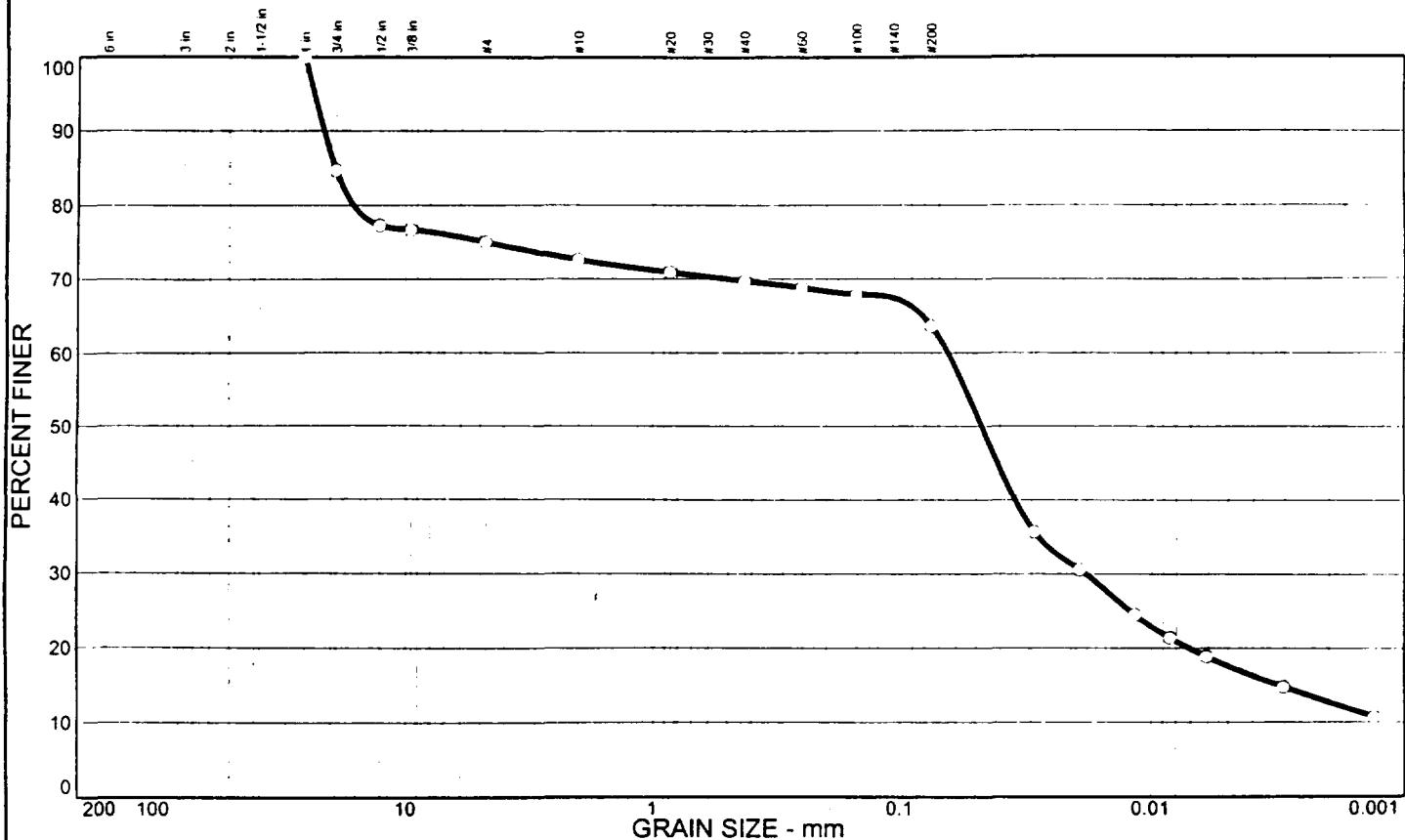
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 13.5 (% coarse = 7.4 % fine = 6.1)
SAND = 19.5 (% coarse = 3.3 % medium = 5.2 % fine = 11.0)
SILT = 49.0 % CLAY = 18.0

85= 3.36 D₆₀= 0.06 D₅₀= 0.04
30= 0.02 D₁₅= 0.00

Cal Jc
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	25.0	11.4	46.0	17.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	1	.75	.5		#4	#10	#20	
1	100.0			#4	75.0			GRAVELLY SILT
.75	84.7			#10	72.6			
.5	77.3			#20	70.9			
.375	76.7			#40	69.7			
				#60	68.8			
				#100	67.9			
				#200	63.6			
<hr/>								
GRAIN SIZE			COEFFICIENTS			REMARKS:		
D ₆₀	0.0646		C _c					
D ₃₀	0.0183		C _u					
D ₁₀								

Source: COC-6

Sample No.: FASED-CSD-S7-0-33"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC.
	Project: SOLUTIA SAUGET AREA 1 PROJECT
	Project No.: 1999-00-0774
	Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-6
ample No.: FASED-CSD-S7-0-33"
lev. or Depth:
ocation:
escription: GRAVELLY SILT
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 109.33
are = 0.00
ry sample weight = 109.33
ample split on number 10 sieve
plit sample data:

Sample and tare = 71.12 Tare = .00 Sample weight = 71.12

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
1 inch	0.00	100.0
.75 inch	16.73	84.7
.5 inch	24.84	77.3
.375 inch	25.44	76.7
# 4	27.32	75.0
# 10	29.94	72.6
# 20	1.63	70.9
# 40	2.87	69.7
# 60	3.72	68.8
# 100	4.60	67.9
# 200	8.85	63.6

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 72.6
eight of hydrometer sample: 71.12
alculated biased weight= 97.96
able of composite correction values:

Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

scus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
ydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

267A-109

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	43.0	35.0	0.0136	43.0	9.2	0.0293	35.7
5.00	20.2	38.0	30.0	0.0136	38.0	10.1	0.0193	30.6
15.00	20.2	32.0	24.0	0.0136	32.0	11.0	0.0117	24.5
30.00	20.2	29.0	21.0	0.0136	29.0	11.5	0.0084	21.4
60.00	20.2	26.5	18.5	0.0136	26.5	11.9	0.0061	18.9
250.00	20.9	22.5	14.5	0.0135	22.5	12.6	0.0030	14.8
1440.00	19.3	18.5	10.5	0.0138	18.5	13.3	0.0013	10.7

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 25.0 (% coarse = 15.3 % fine = 9.7)

SAND = 11.4 (% coarse = 2.4 % medium = 2.9 % fine = 6.1)

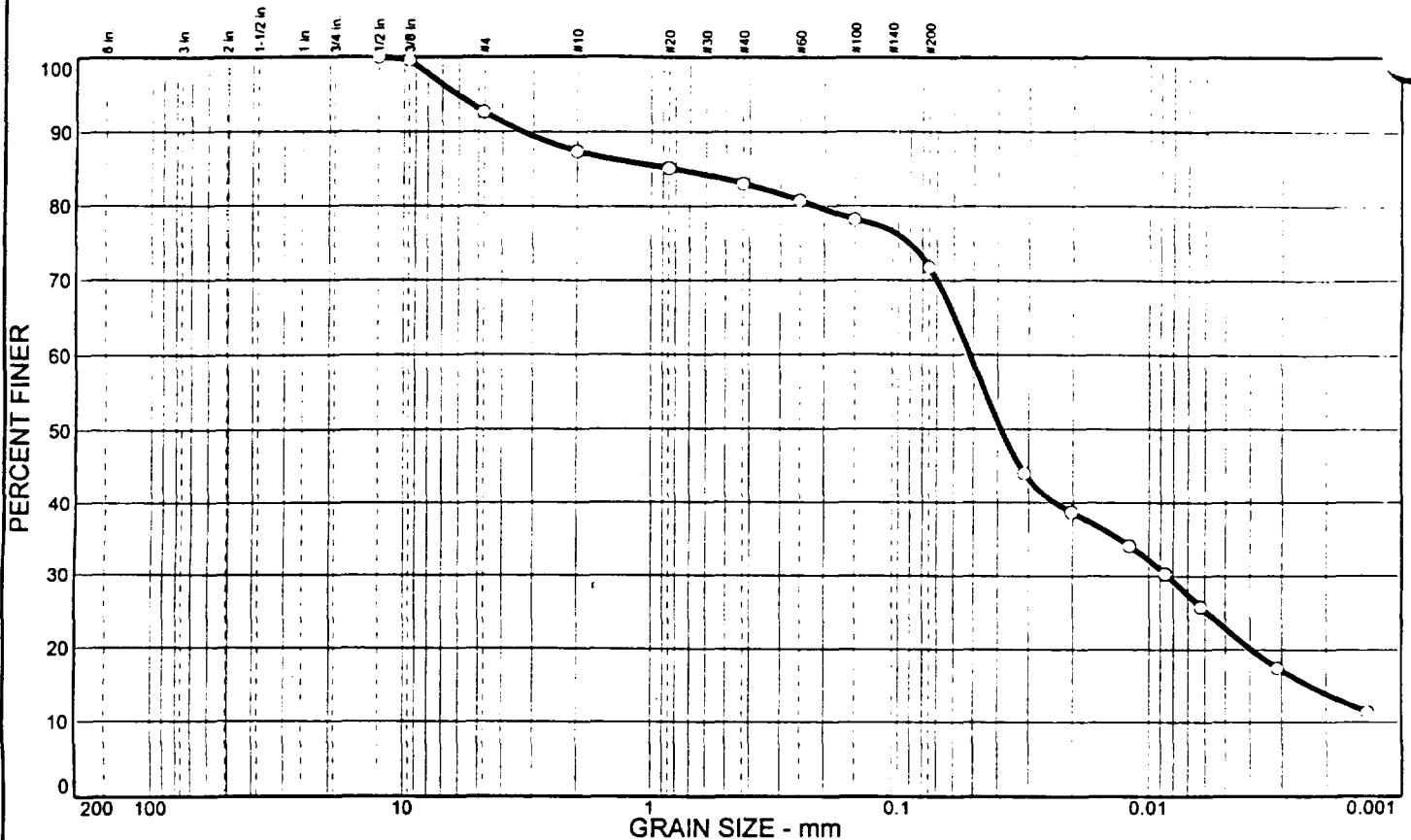
SILT = 46.0 % CLAY = 17.6

35= 19.19 D₆₀= 0.06 D₅₀= 0.05

30= 0.02 D₁₅= 0.00

Daly
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	7.3	21.0	48.8	22.9	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0 99.6			#4	92.7			○ SILT, WITH SAND
<hr/>								
GRAIN SIZE								
D ₆₀	0.0515			#10	87.4			
D ₃₀	0.0084			#20	85.1			
D ₁₀				#40	83.0			
<hr/>								
COEFFICIENTS								
C _c				#60	80.7			
C _u				#100	78.2			
				#200	71.7			

○ Source: COC-11

Sample No.: FASED-CSD-S8-0-29"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC.
	Project: SOLUTIA SAUGET AREA 1 PROJECT
	Project No.: 1999-00-0774
	267A-111

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-11

ample No.: FASED-CSD-S8-0-29"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 104.39

are = 0.00

ry sample weight = 104.39

ample split on number 10 sieve

plit sample data:

Sample and tare = 57.61 Tare = .00 Sample weight = 57.61

-mulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	0.46	99.6
# 4	7.60	92.7
# 10	13.20	87.4
# 20	1.54	85.1
# 40	2.90	83.0
# 60	4.41	80.7
# 100	6.09	78.2
# 200	10.32	71.7

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 87.4

ight of hydrometer sample: 57.61

lculated biased weight= 65.92

ble of composite correction values:

Temp, deg C: 18.0 20.5

Comp. corr: -8.0 -8.0

niscus correction only= 0

ific gravity of solids= 2.65

ific gravity correction factor= 1.000

urometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.3	37.0	29.0	0.0138	37.0	10.2	0.0311	44.0
5.00	19.3	33.5	25.5	0.0138	33.5	10.8	0.0202	38.7
15.00	19.2	30.5	22.5	0.0138	30.5	11.3	0.0120	34.1
30.00	19.3	28.0	20.0	0.0138	28.0	11.7	0.0086	30.3
60.00	19.3	25.0	17.0	0.0138	25.0	12.2	0.0062	25.8
250.00	20.2	19.5	11.5	0.0136	19.5	13.1	0.0031	17.5
1440.00	18.0	15.5	7.5	0.0140	15.5	13.8	0.0014	11.4

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 7.3 (% coarse = % fine = 7.3)

SAND = 21.0 (% coarse = 5.3 % medium = 4.4 % fine = 11.3)

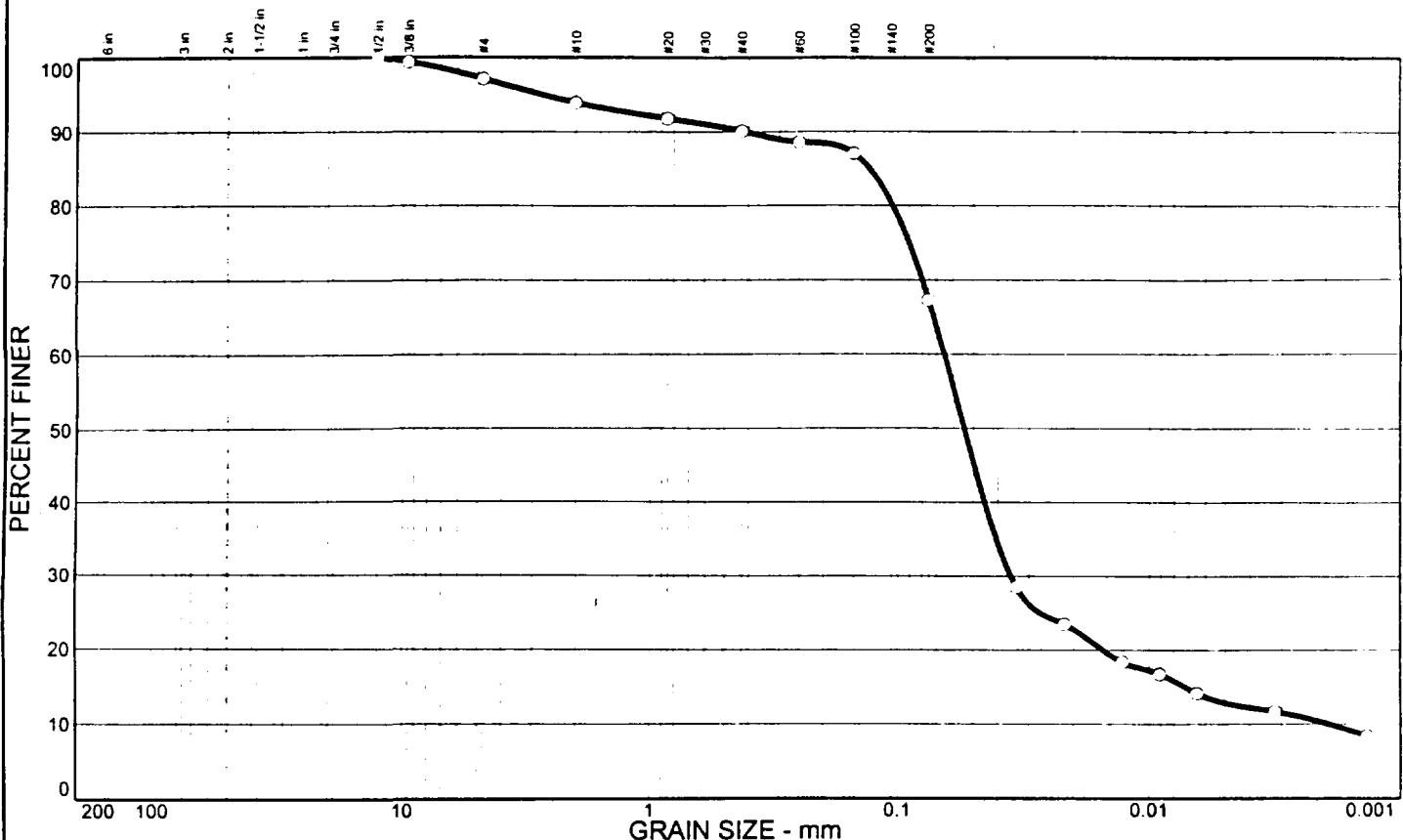
SILT = 48.8 % CLAY = 22.9

85= 0.82 D60= 0.05 D50= 0.04

30= 0.01 D15= 0.00

Analyst
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	2.9	29.8	54.5	12.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	#5	#10	#20
.5	100.0		
.375	99.4		
GRAIN SIZE			
D ₆₀	0.0650		
D ₃₀	0.0354		
D ₁₀	0.0020		
COEFFICIENTS			
C _c	9.87		
C _u	33.30		

SIEVE number size	PERCENT FINER		
	#4	#10	#20
#4	97.1		
#10	93.9		
#20	91.8		
#40	90.1		
#60	88.6		
#100	87.0		
#200	67.3		

SOIL DESCRIPTION
• FINE SANDY SILT
REMARKS:
•

Source: COC-6

Sample No.: FASED-CSD-S9W-0-23"

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-114

Plate

Thompson Engineering

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ject: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-6

ample No.: FASED-CSD-S9W-0-23"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: FINE SANDY SILT

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 169.43

are = 0.00

ry sample weight = 169.43

ample split on number 10 sieve

plit sample data:

Sample and tare = 56.04 Tare = .00 Sample weight = 56.04

Cumulative weight retained tare= .00

? for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	1.10	99.4
# 4	4.94	97.1
# 10	10.30	93.9
# 20	1.28	91.8
# 40	2.28	90.1
# 60	3.14	88.6
# 100	4.14	87.0
# 200	15.86	67.3

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 93.9

eight of hydrometer sample: 56.04

alculated biased weight= 59.68

able of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

yarometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	25.0	17.0	0.0136	25.0	12.2	0.0336	28.5
5.00	20.2	22.0	14.0	0.0136	22.0	12.7	0.0217	23.5
15.00	20.2	19.0	11.0	0.0136	19.0	13.2	0.0128	18.4
30.00	20.2	18.0	10.0	0.0136	18.0	13.3	0.0091	16.8
60.00	20.2	16.5	8.5	0.0136	16.5	13.6	0.0065	14.2
250.00	20.8	15.0	7.0	0.0135	15.0	13.8	0.0032	11.7
1440.00	19.4	13.0	5.0	0.0137	13.0	14.2	0.0014	8.4

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 2.9 (% coarse = % fine = 2.9)

SAND = 29.8 (% coarse = 3.2 % medium = 3.8 % fine = 22.8)

SILT = 54.5 % CLAY = 12.8

35= 0.13 D60= 0.07 D50= 0.05

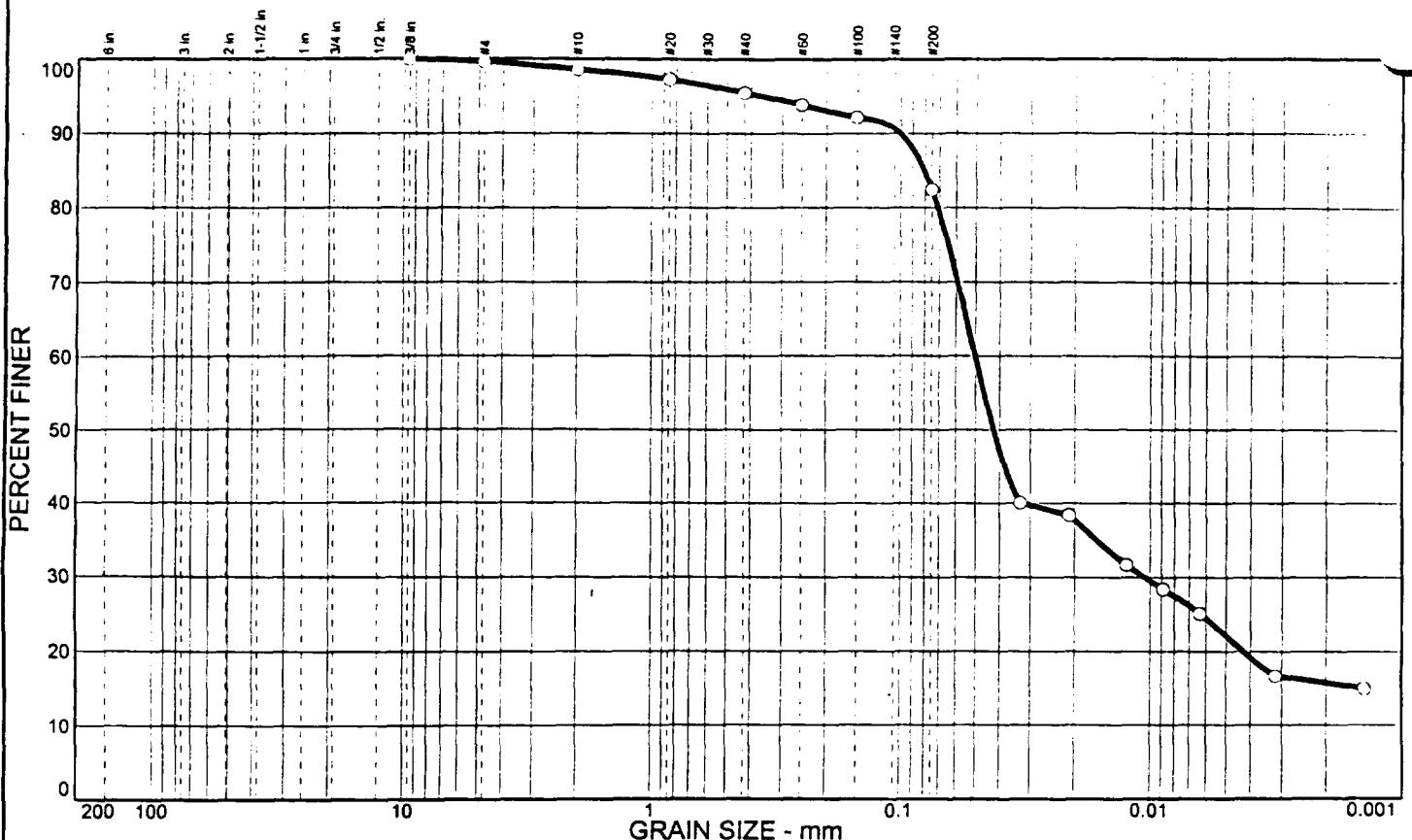
30= 0.04 D15= 0.01 D10= 0.00

Cu= 9.8731 Cc= 33.2992



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.4	17.2	60.3	22.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0501		
D ₃₀	0.0105		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-4

SIEVE number size	PERCENT FINER		
	○		
#4	99.6		
#10	98.6		
#20	97.3		
#40	95.5		
#60	93.9		
#100	92.2		
#200	82.4		

SOIL DESCRIPTION
○ SILT, WITH SAND

REMARKS:
○

Sample No.: FASED-CSE-S1 -0-12"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-117

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-4

ample No.: FASED-CSE-S1 -0-12"

lev. or Depth:

Sample Length (in./cm.):

cation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 139.64

are = 0.00

ry sample weight = 139.64

ample split on number 10 sieve

plit sample data:

Sample and tare = 59.03 Tare = .00 Sample weight = 59.03

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve Cumul. Wt. Percent

retained finer

.375 inch	0.00	100.0
# 4	0.63	99.6
# 10	1.93	98.6
# 20	0.79	97.3
# 40	1.84	95.5
# 60	2.79	93.9
# 100	3.86	92.2
# 200	9.73	82.4

Hydrometer Analysis Data

eparation sieve is #10

Percent -#10 based upon complete sample= 98.6

ight of hydrometer sample: 59.03

lculated biased weight= 59.87

ble of composite correction values:

Temp, deg C: 15.5 19.5

Comp. corr: -8.0 -8.0

niscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

ometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.1	32.0	24.0	0.0140	32.0	11.0	0.0328	40.1
5.00	18.1	31.0	23.0	0.0140	31.0	11.2	0.0209	38.4
15.00	18.4	27.0	19.0	0.0139	27.0	11.9	0.0124	31.7
30.00	18.5	25.0	17.0	0.0139	25.0	12.2	0.0089	28.4
60.00	18.9	23.0	15.0	0.0138	23.0	12.5	0.0063	25.1
250.00	19.5	18.0	10.0	0.0137	18.0	13.3	0.0032	16.7
1440.00	15.3	17.0	9.0	0.0145	17.0	13.5	0.0014	15.0

Fractional Components

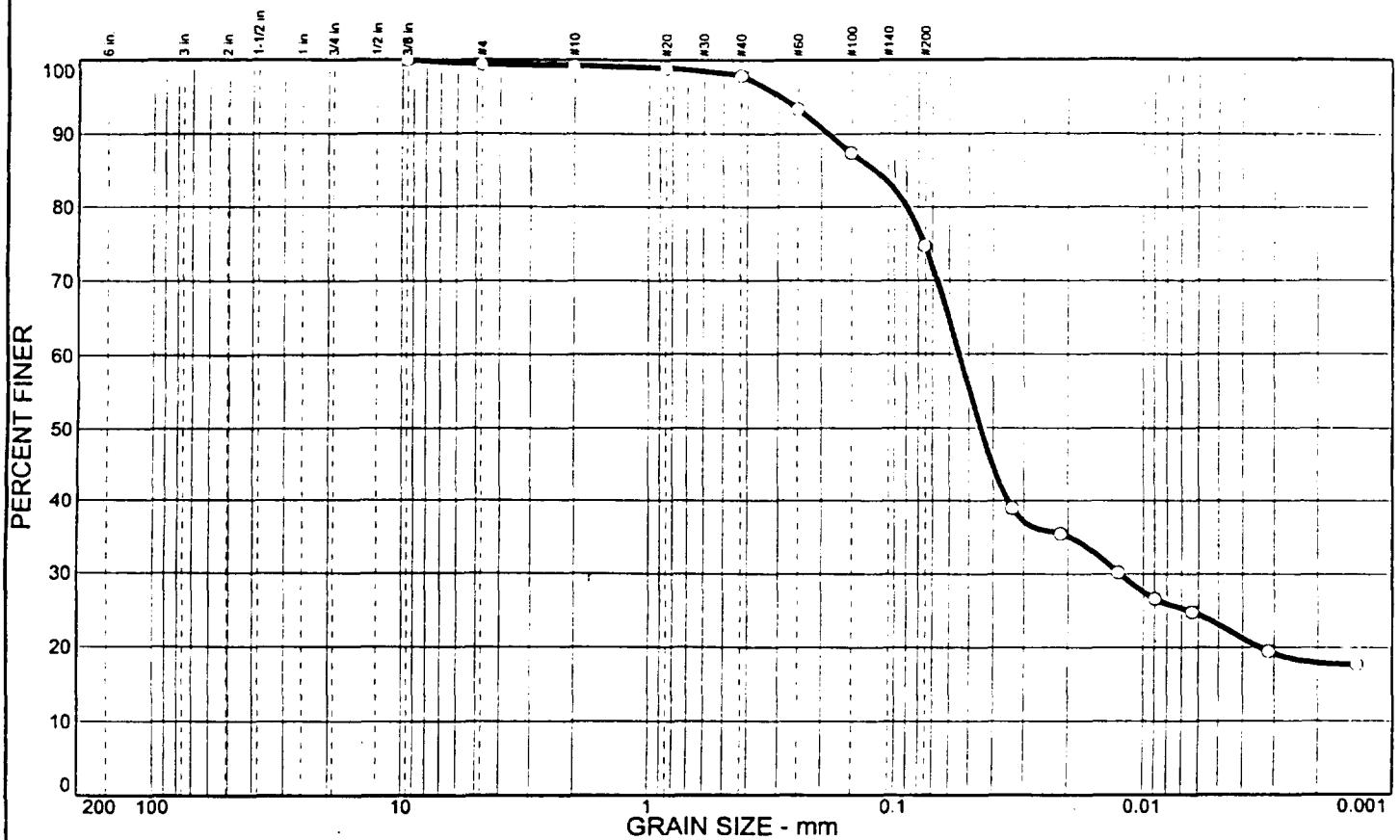
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.4 (% coarse = % fine = 0.4)
 SAND = 17.2 (% coarse = 1.0 % medium = 3.1 % fine = 13.1)
 SILT = 60.3 % CLAY = 22.1

85= 0.08 D₆₀= 0.05 D₅₀= 0.04
 30= 0.01 D₁₅= 0.00

Barry
 MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.6	24.7	51.6	23.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0547		
D ₃₀	0.0124		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-4

SIEVE number size	PERCENT FINER		
	○		
#4	99.4		
#10	99.2		
#20	98.9		
#40	97.9		
#60	93.4		
#100	87.4		
#200	74.7		

SOIL DESCRIPTION
○ SILT, WITH SAND
REMARKS:
○

Sample No.: FASED-CSE-S2W-0-19'

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-120

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-4
ample No.: FASED-CSE-S2W-0-19'
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Weight sample and tare= 157.32
Tare = 0.00
Weight sample = 157.32
Sample split on number 10 sieve

Split sample data:

Sample and tare = 55.93 Tare = .00 Sample weight = 55.93

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.88	99.4
# 10	1.26	99.2
# 20	0.16	98.9
# 40	0.74	97.9
# 60	3.28	93.4
# 100	6.68	87.4
# 200	13.82	74.7

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 99.2
Weight of hydrometer sample: 55.93
Calculated biased weight= 56.38
Table of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

Nuisance correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.0	30.0	22.0	0.0140	30.0	11.4	0.0334	39.0
5.00	18.0	28.0	20.0	0.0140	28.0	11.7	0.0214	35.5
15.00	18.2	25.0	17.0	0.0140	25.0	12.2	0.0126	30.2
30.00	18.6	23.0	15.0	0.0139	23.0	12.5	0.0090	26.6
60.00	18.9	22.0	14.0	0.0138	22.0	12.7	0.0064	24.8
250.00	19.5	19.0	11.0	0.0137	19.0	13.2	0.0032	19.5
1440.00	15.4	18.0	10.0	0.0145	18.0	13.3	0.0014	17.7

Fractional Components

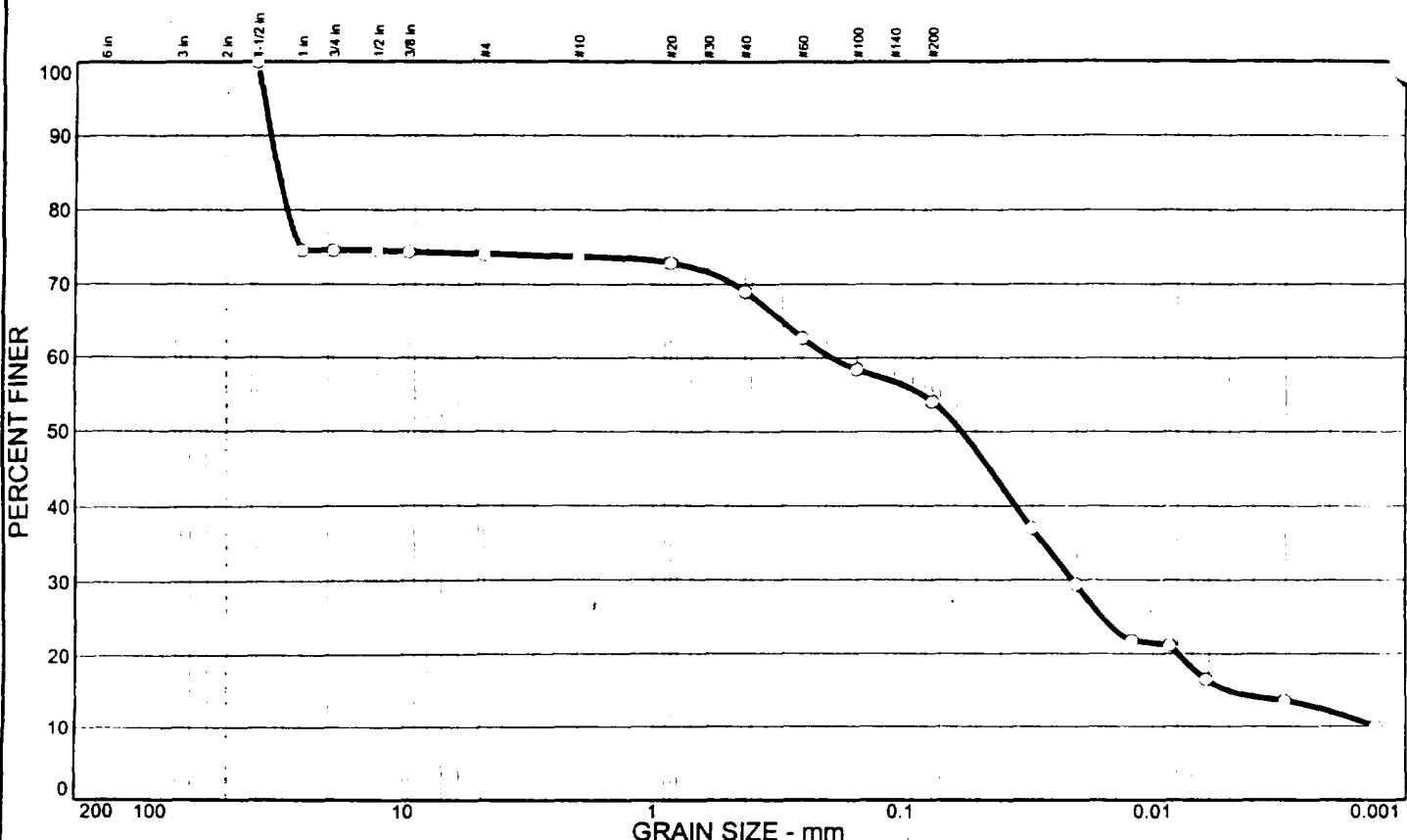
Ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.6 (% coarse = % fine = 0.6)
 SAND = 24.7 (% coarse = 0.2 % medium = 1.3 % fine = 23.2)
 SILT = 51.6 % CLAY = 23.1

85= 0.12 D₆₀= 0.05 D₅₀= 0.04
 30= 0.01

Daly
 MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	25.9	20.1	39.1	14.9	---	---	---	---

SIEVE inches size	PERCENT FINER		
	(○)	(—)	(×
1.5	100.0		
.75	74.6		
.5	74.6		
.375	74.4		

GRAIN SIZE		
D ₆₀	D ₃₀	D ₁₀
0.189	0.0208	
		0.0013

COEFFICIENTS		
C _c	C _u	
1.73	143.38	

SIEVE number size	PERCENT FINER		
	(○)	(—)	(×
#4	74.1		
#10	73.7		
#20	72.9		
#40	69.0		
#60	62.7		
#100	58.4		
#200	54.0		

SOIL DESCRIPTION
 ○ GRAVELLY SILT, WITH SAND

REMARKS:
 ○

Source: COC-7

Sample No.: FASED-CSE-S3-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
 Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-123

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-7
Sample No.: FASED-CSE-S3-0-13"
lev. or Depth:
Location:
Description: GRAVELLY SILT, WITH SAND
Liquid Limit: - - -
SCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 254.98
tare = 0.00
dry sample weight = 254.98
sample split on number 10 sieve
split sample data:

Sample and tare = 62.68 Tare = .00 Sample weight = 62.68

Cumulative weight retained tare= .00

? for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
1.5 inch	0.00	100.0
1 inch	64.73	74.6
.75 inch	64.73	74.6
.5 inch	64.73	74.6
.375 inch	65.37	74.4
# 4	65.99	74.1
# 10	67.06	73.7
# 20	0.72	72.9
# 40	4.03	69.0
# 60	9.33	62.7
# 100	13.04	58.4
# 200	16.72	54.0

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 73.7
Weight of hydrometer sample: 62.68
Calculated biased weight= 85.05
Table of composite correction values:

Temp, deg C: 24.0 18.0
Comp. corr: -8.0 -8.0

SCS correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H

267A-124

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	39.5	31.5	0.0136	39.5	9.8	0.0302	37.0
5.00	19.9	33.0	25.0	0.0137	33.0	10.9	0.0202	29.4
15.00	20.3	26.5	18.5	0.0136	26.5	11.9	0.0121	21.8
30.00	20.5	26.0	18.0	0.0136	26.0	12.0	0.0086	21.2
60.00	21.8	22.0	14.0	0.0133	22.0	12.7	0.0061	16.5
250.00	22.6	19.5	11.5	0.0132	19.5	13.1	0.0030	13.5
1440.00	20.3	16.5	8.5	0.0136	16.5	13.6	0.0013	10.0

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 25.9 (% coarse = 25.4 % fine = 0.5)

SAND = 20.1 (% coarse = 0.4 % medium = 4.7 % fine = 15.0)

SILT = 39.1 % CLAY = 14.9

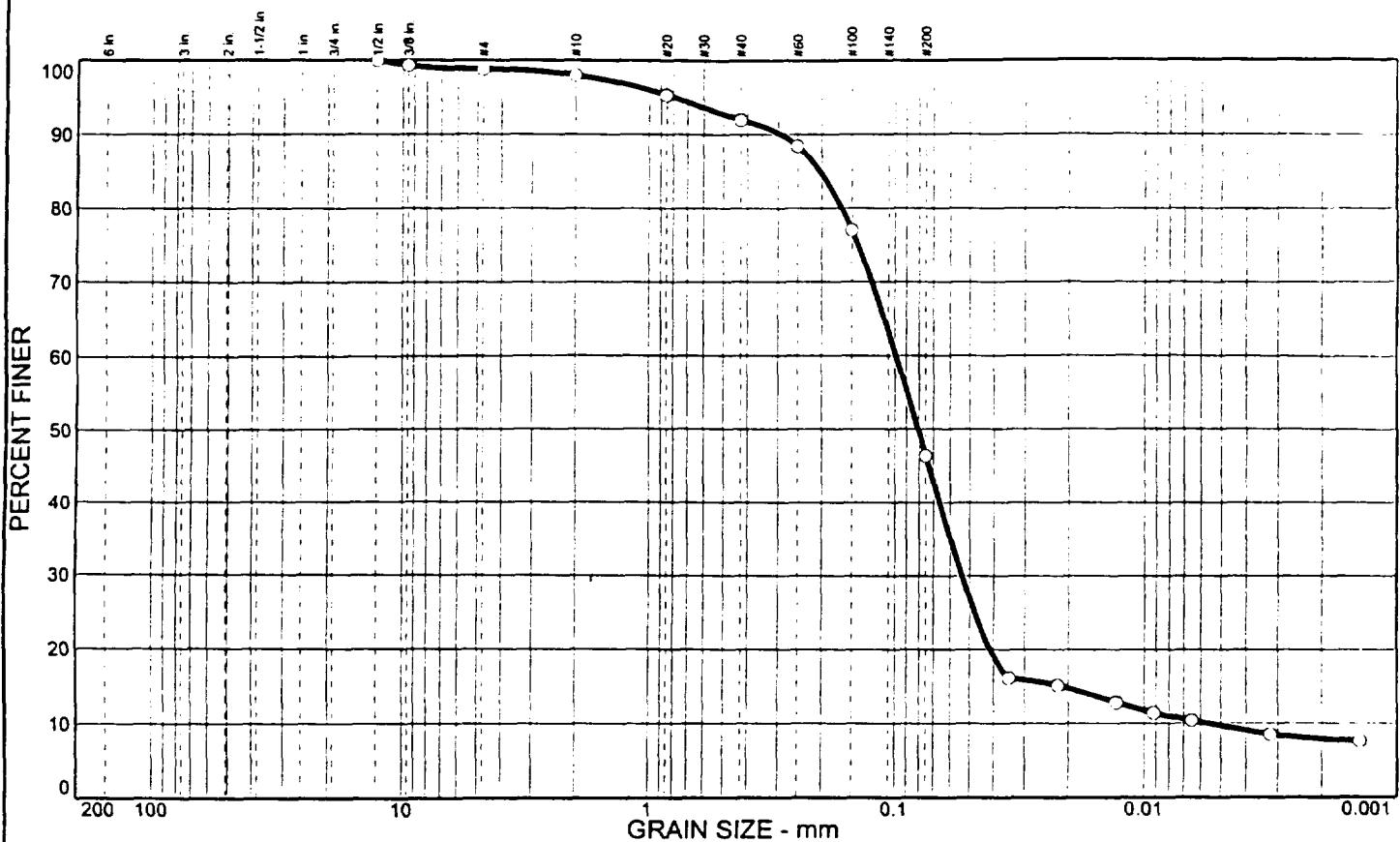
D₃₅= 31.39 D₆₀= 0.19 D₅₀= 0.06

D₁₀= 0.02 D₁₅= 0.01 D₁₀= 0.00

C_u= 1.7303 C_u= 143.3762

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.2	52.4	36.8	9.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.5 .375	100.0 99.3		
GRAIN SIZE			
D ₆₀	0.0989		
D ₃₀	0.0536		
D ₁₀	0.0056		
COEFFICIENTS			
C _c	5.15		
C _u	17.53		

SIEVE number size	PERCENT FINER		
	○		
#4	98.8		
#10	98.0		
#20	95.3		
#40	92.0		
#60	88.4		
#100	77.0		
#200	46.4		

SOIL DESCRIPTION
 ○ SILTY FINE SAND, TRACE GRAVEL

REMARKS:
 ○

○ Source: COC-1

Sample No.: FASED-CSE-S4E-0-17"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-126

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-1
Sample No.: FASED-CSE-S4E-0-17"
Level or Depth: Sample Length (in./cm.):
Location:
Description: SILTY FINE SAND, TRACE GRAVEL
Liquid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

My sample and tare= 153.17
Tare = 0.00
My sample weight = 153.17
Sample split on number 10 sieve

Net sample data:

Sample and tare = 103.56 Tare = .00 Sample weight = 103.56

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	1.09	99.3
# 4	1.92	98.8
# 10	3.11	98.0
# 20	2.88	95.3
# 40	6.33	92.0
# 60	10.11	88.4
# 100	22.17	77.0
# 200	54.57	46.4

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 98.0
Weight of hydrometer sample: 103.56
Calculated biased weight= 105.67
Table of composite correction values:
Temp, deg C: 15.4 19.5
Comp. corr: -8.0 -8.0

Nuisance correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	17.9	25.0	17.0	0.0140	25.0	12.2	0.0346	16.1
5.00	18.0	24.0	16.0	0.0140	24.0	12.4	0.0220	15.1
15.00	18.1	21.5	13.5	0.0140	21.5	12.8	0.0129	12.8
30.00	18.4	20.0	12.0	0.0139	20.0	13.0	0.0092	11.4
60.00	18.7	19.0	11.0	0.0139	19.0	13.2	0.0065	10.4
250.00	19.5	17.0	9.0	0.0137	17.0	13.5	0.0032	8.5
1440.00	15.4	16.0	8.0	0.0145	16.0	13.7	0.0014	7.6

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 1.2 (% coarse = % fine = 1.2)

SAND = 52.4 (% coarse = 0.8 % medium = 6.0 % fine = 45.6)

SILT = 36.8 % CLAY = 9.6

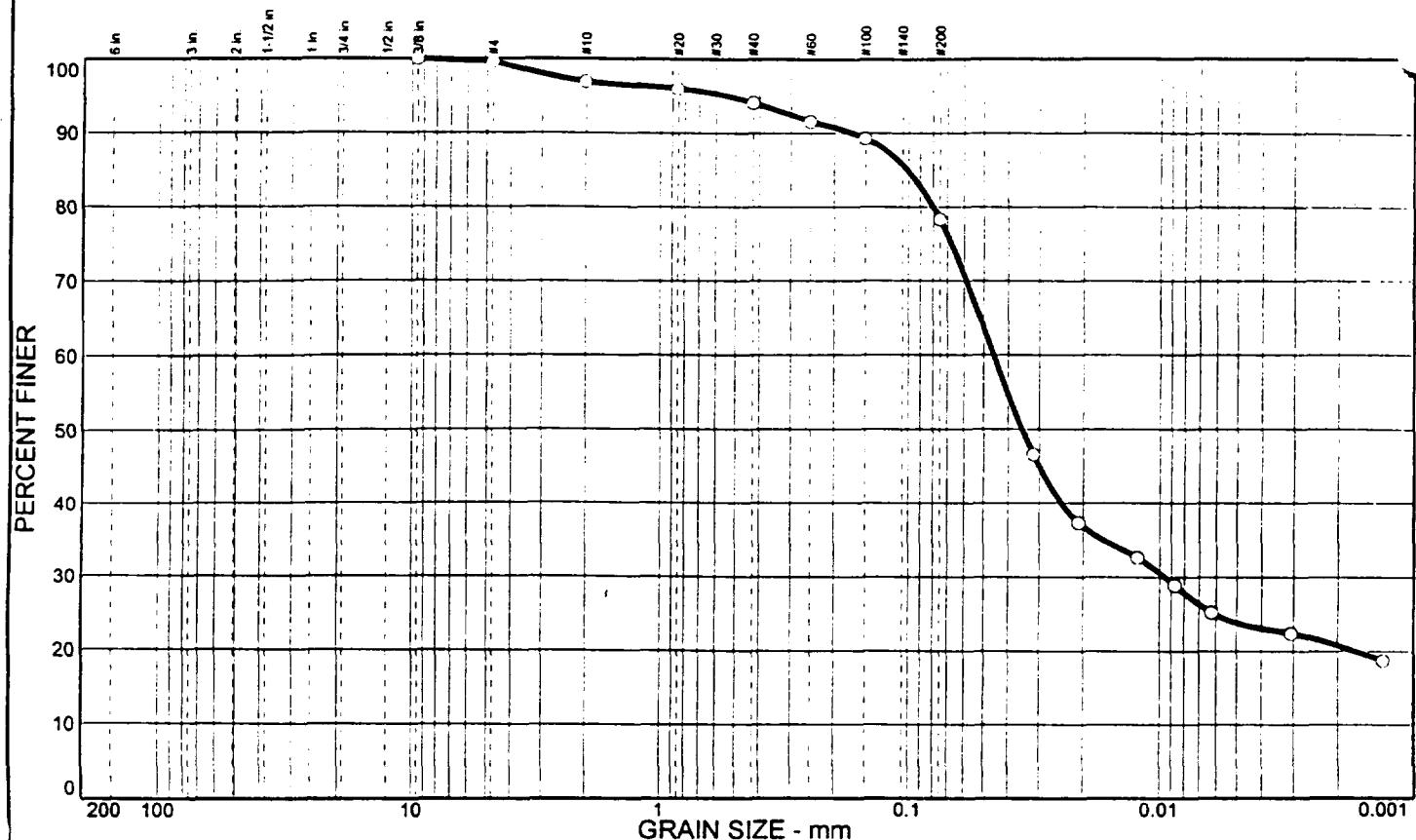
D₅= 0.20 D₆₀= 0.10 D₅₀= 0.08

D₁₀= 0.05 D₁₅= 0.02 D₁₀= 0.01

Cu= 5.1486 C_u= 17.5325

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.4	21.3	54.5	23.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0457		
D ₃₀	0.0095		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.6		
#10	96.9		
#20	96.0		
#40	94.1		
#60	91.6		
#100	89.3		
#200	78.3		

SOIL DESCRIPTION
 SILT, WITH SAND

REMARKS:

○ Source: COC-1

Sample No.: FASED-CSE-SSE-0-24"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-129

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSE-S5E-0-24"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 164.72
are = 0.00
ry sample weight = 164.72
mple split on number 10 sieve
plit sample data:
Sample and tare = 51.95 Tare = .00 Sample weight = 51.95
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.71	99.6
# 10	5.04	96.9
# 20	0.49	96.0
# 40	1.51	94.1
# 60	2.82	91.6
# 100	4.09	89.3
# 200	9.97	78.3

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 96.9
ight of hydrometer sample: 51.95
lculated biased weight= 53.61
ble of composite correction values:
Temp, deg C: 19.5 21.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
ific gravity correction factor= 1.000
rometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.3	33.0	25.0	0.0136	33.0	10.9	0.0317	46.6
5.00	20.4	28.0	20.0	0.0136	28.0	11.7	0.0208	37.3
15.00	20.3	25.5	17.5	0.0136	25.5	12.1	0.0122	32.6
30.00	20.7	23.5	15.5	0.0135	23.5	12.4	0.0087	28.9
60.00	20.9	21.5	13.5	0.0135	21.5	12.8	0.0062	25.2
250.00	21.6	20.0	12.0	0.0134	20.0	13.0	0.0031	22.4
1440.00	19.2	18.0	10.0	0.0138	18.0	13.3	0.0013	18.7

Fractional Components

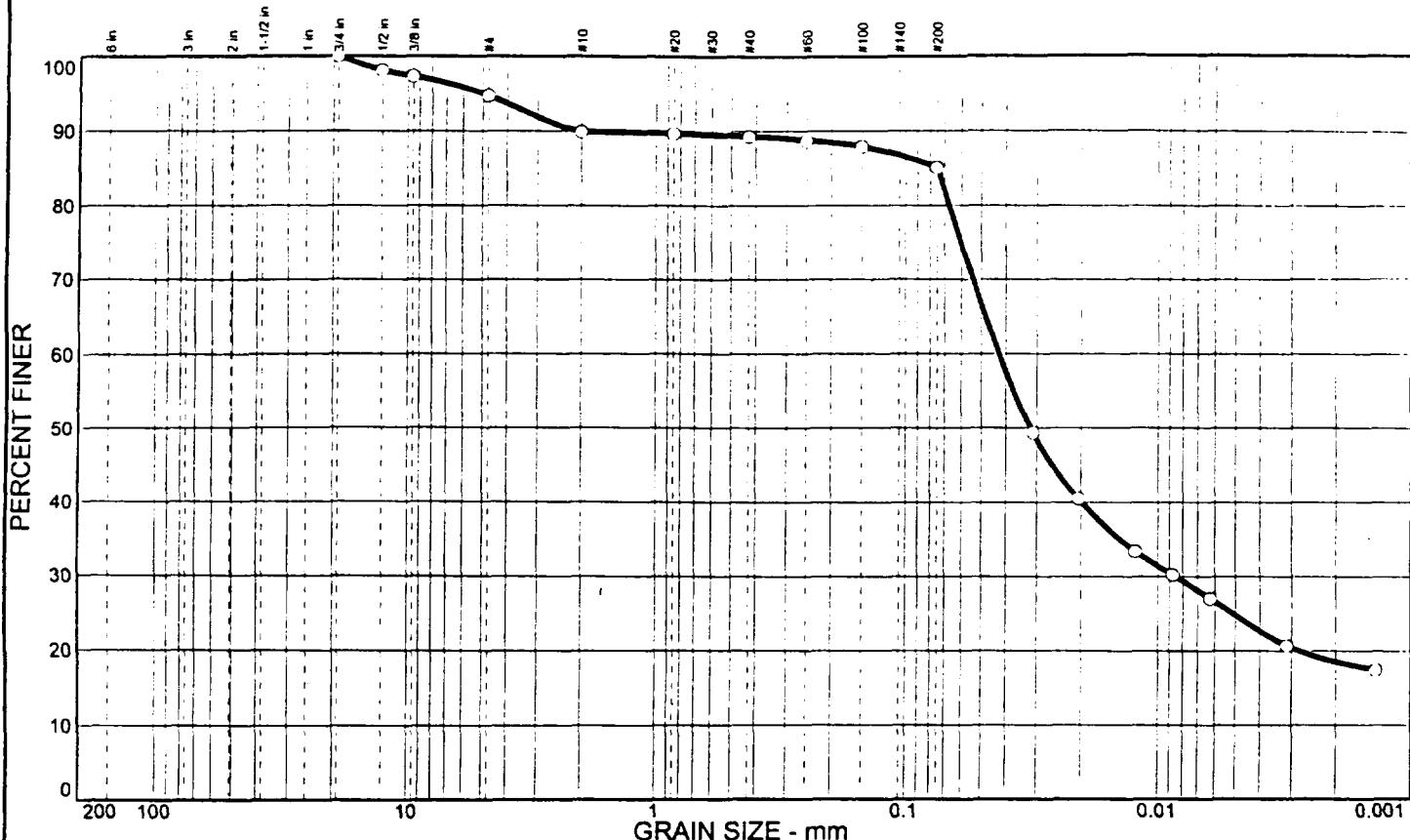
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.4 (% coarse = % fine = 0.4)
SAND = 21.3 (% coarse = 2.7 % medium = 2.8 % fine = 15.8)
SILT = 54.5 % CLAY = 23.8

35= 0.10 D₆₀= 0.05 D₅₀= 0.04
30= 0.01

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	5.3	9.6	60.3	24.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.75	100.0		
.5	98.1		
.375	97.3		

GRAIN SIZE			
D ₆₀	D ₃₀	D ₁₀	
0.0425	0.0085		

COEFFICIENTS			
C _c			

SIEVE number size	PERCENT FINER		
	○		
#4	94.7		
#10	89.9		
#20	89.7		
#40	89.3		
#60	88.7		
#100	87.9		
#200	85.1		

SOIL DESCRIPTION
○ SILT, TRACE SAND

REMARKS:
○

Source: COC-4

Sample No.: FASED-CSE-S6W-0-35"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-132

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-4

ample No.: FASED-CSE-S6W-0-35"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 176.29

re = 0.00

ry sample weight = 176.29

mple split on number 10 sieve

lit sample data:

Sample and tare = 56.57 Tare = .00 Sample weight = 56.57

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.5 inch	3.28	98.1
.375 inch	4.76	97.3
# 4	9.41	94.7
# 10	17.81	89.9
# 20	0.10	89.7
# 40	0.37	89.3
# 60	0.75	88.7
# 100	1.28	87.9
# 200	3.00	85.1

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 89.9

ight of hydrometer sample: 56.57

lculated biased weight= 62.93

ble of composite correction values:

Temp, deg C: 15.5 19.5

Comp. corr: -8.0 -8.0

scus correction only= 0

ific gravity of solids= 2.65

cific gravity correction factor= 1.000

idrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

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Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	39.0	31.0	0.0140	39.0	9.9	0.0311	49.3
5.00	18.3	33.5	25.5	0.0139	33.5	10.8	0.0205	40.5
15.00	18.3	29.0	21.0	0.0139	29.0	11.5	0.0122	33.4
20.00	18.6	27.0	19.0	0.0139	27.0	11.9	0.0087	30.2
60.00	18.8	25.0	17.0	0.0139	25.0	12.2	0.0062	27.0
250.00	19.5	21.0	13.0	0.0137	21.0	12.9	0.0031	20.7
1440.00	15.4	19.0	11.0	0.0145	19.0	13.2	0.0014	17.5

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 5.3 (% coarse = % fine = 5.3)

SAND = 9.6 (% coarse = 4.8 % medium = 0.6 % fine = 4.2)

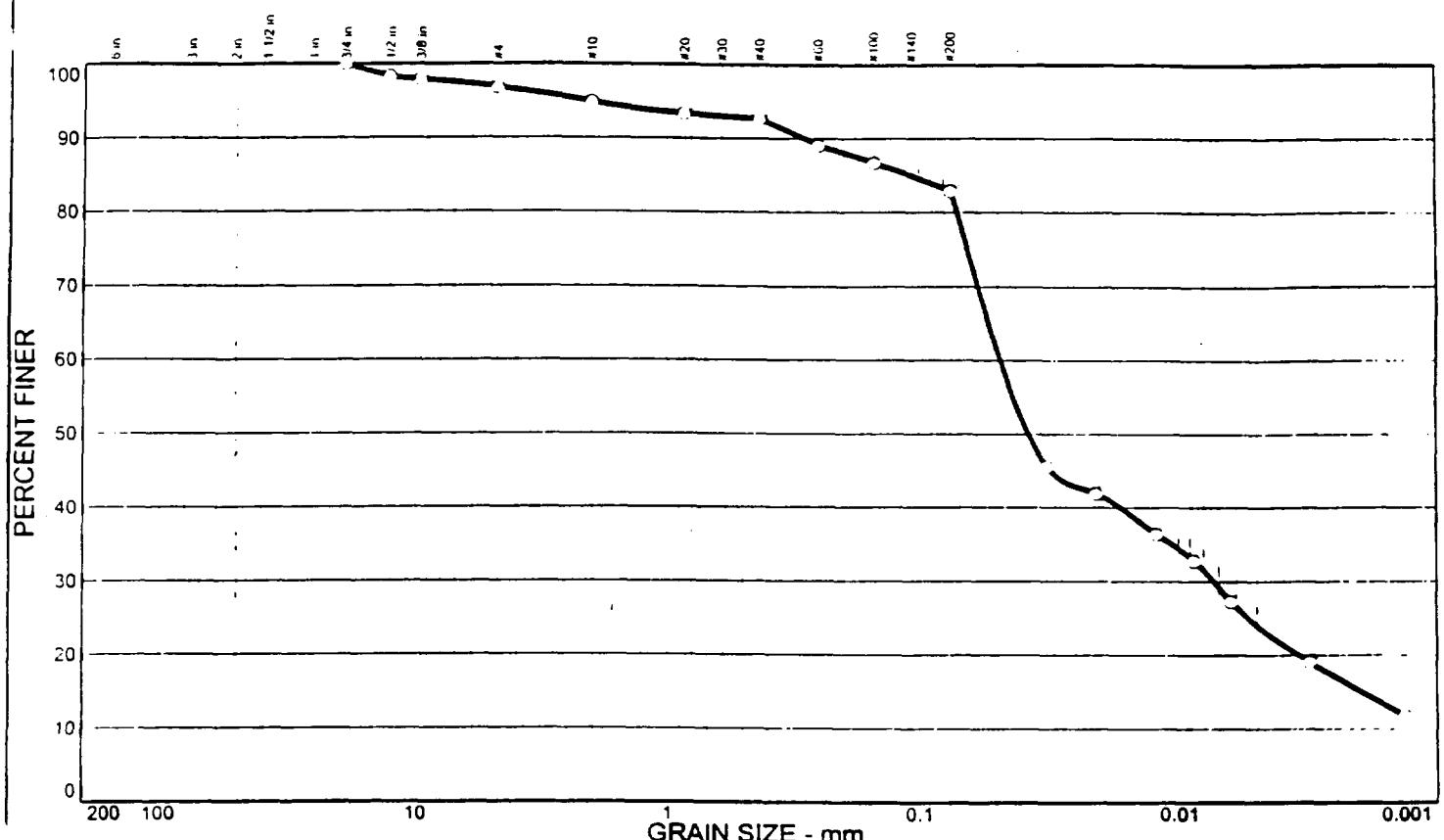
SILT = 60.3 % CLAY = 24.8

D₃₅ = 0.07 D₆₀ = 0.04 D₅₀ = 0.03

D₁₀ = 0.01

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	3.2	13.9	58.9	24.0	---	---	---	---

SIEVE PERCENT FINER			SIEVE PERCENT FINER			SOIL DESCRIPTION		
inches size			number size			SILT, WITH SAND		
.75	100.0		#4	96.8				
.375	98.3		#10	94.9				
	97.9		#20	93.4				
			#40	92.7				
			#60	89.1				
			#100	86.7				
			#200	82.9				
GRAIN SIZE			COEFFICIENTS			REMARKS:		
D ₆₀	0.0488		C _c					
D ₃₀	0.0073		C _u					
D ₁₀								

Source: COC-8

Sample No.:

FASED-CSE-S7W-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-135

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-8
ample No.: FASED-CSE-S7W-0-13"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 104.35
are = 0.00
ry sample weight = 104.35
ample split on number 10 sieve
plit sample data:

Sample and tare = 52.09 Tare = .00 Sample weight = 52.09

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.75 inch	0.00	100.0
.5 inch	1.80	98.3
.375 inch	2.15	97.9
# 4	3.31	96.8
# 10	5.33	94.9
# 20	0.81	93.4
# 40	1.19	92.7
# 60	3.16	89.1
# 100	4.51	86.7
# 200	6.59	82.9

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 94.9
eight of hydrometer sample: 52.09
lculated biased weight= 54.89
able of composite correction values:
Temp, deg C: 20.0 18.0
Comp. corr: -8.0 -8.0

iniscus correction only= 0
fic gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

267A-136

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.2	33.0	25.0	0.0138	33.0	10.9	0.0322	45.6
5.00	19.2	31.0	23.0	0.0138	31.0	11.2	0.0206	41.9
5.00	19.3	28.0	20.0	0.0138	28.0	11.7	0.0122	36.4
30.00	19.3	26.0	18.0	0.0138	26.0	12.0	0.0087	32.8
60.00	19.6	23.0	15.0	0.0137	23.0	12.5	0.0063	27.3
250.00	19.6	18.5	10.5	0.0137	18.5	13.3	0.0032	19.1
1440.00	19.7	14.5	6.5	0.0137	14.5	13.9	0.0013	11.8

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 3.2 (% coarse = % fine = 3.2)

SAND = 13.9 (% coarse = 1.9 % medium = 2.2 % fine = 9.8)

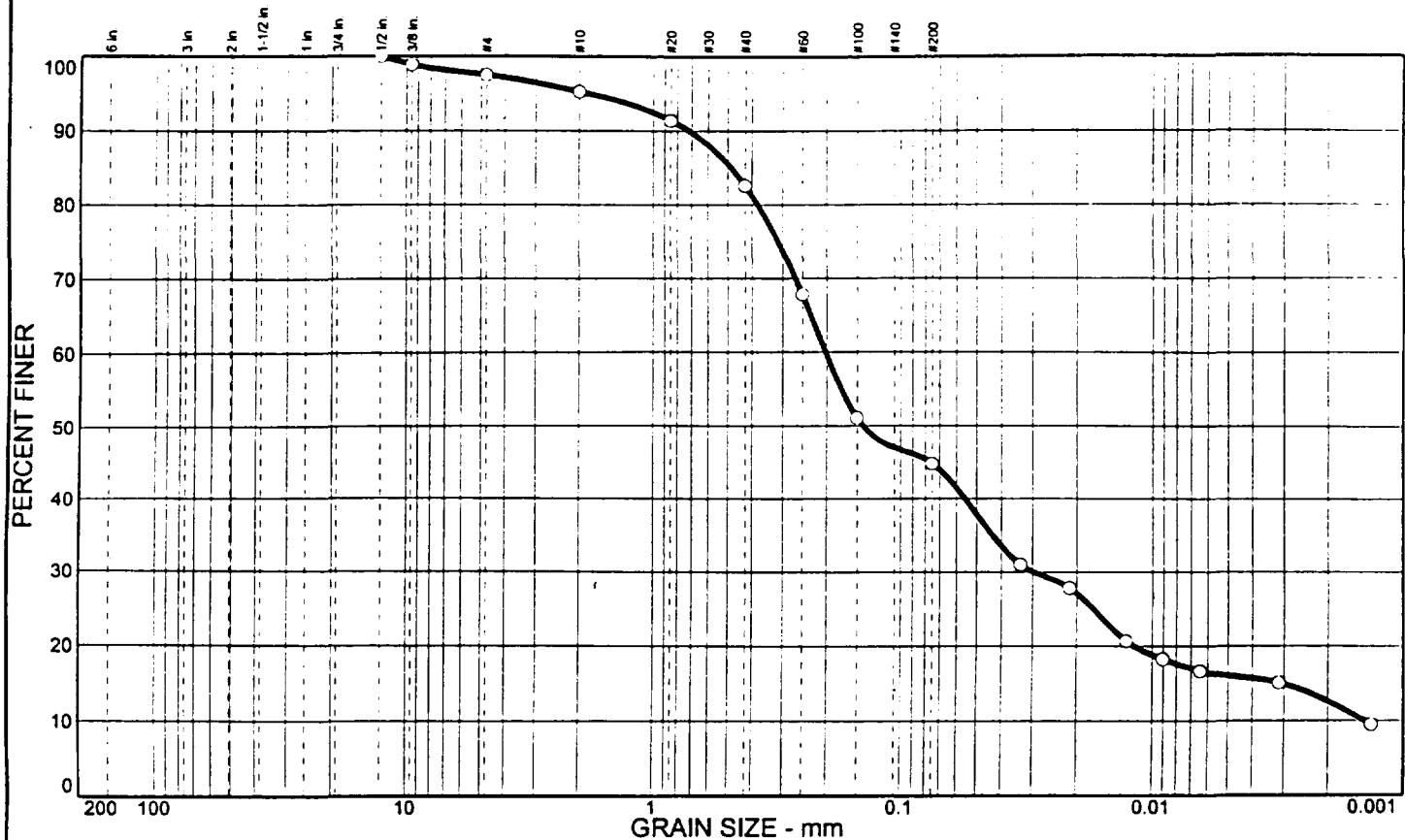
SILT = 58.9 % CLAY = 24.0

D₅= 0.11 D₆₀= 0.05 D₅₀= 0.04

D₁₀= 0.01 D₁₅= 0.00

Hal Yc
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	2.5	52.7	28.7	16.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.5 .375	100.0 98.9		
<hr/>			
GRAIN SIZE			
D ₆₀	0.201		
D ₃₀	0.0298		
D ₁₀	0.0014		
<hr/>			
COEFFICIENTS			
C _c	3.08		
C _u	140.99		

SIEVE number size	PERCENT FINER		
	○		
#4	97.5		
#10	95.3		
#20	91.4		
#40	82.6		
#60	67.8		
#100	51.1		
#200	44.8		

SOIL DESCRIPTION
 SILTY MEDIUM TO FINE SAND, TRACE GRAVEL

REMARKS:

○ Source: COC-7

Sample No.: FASED-CSE-S8-0-32"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-138

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-7

ample No.: FASED-CSE-S8-0-32"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILTY MEDIUM TO FINE SAND, TRACE GRAVEL

Liquid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 198.33

re = 0.00

ry sample weight = 198.33

ample split on number 10 sieve

plit sample data:

Sample and tare = 59.98 Tare = .00 Sample weight = 59.98

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	2.21	98.9
# 4	5.04	97.5
# 10	9.38	95.3
# 20	2.46	91.4
# 40	7.99	82.6
# 60	17.31	67.8
# 100	27.81	51.1
# 200	31.76	44.8

Hydrometer Analysis Data

paration sieve is #10

recent -#10 based upon complete sample= 95.3

ight of hydrometer sample: 59.98

calculated biased weight= 62.94

ble of composite correction values:

Temp, deg C: 24.0 18.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

fic gravity of solids= 2.65

fic gravity correction factor= 1.000

dometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.4	27.5	19.5	0.0137	27.5	11.8	0.0334	31.0
5.00	19.5	25.5	17.5	0.0137	25.5	12.1	0.0214	27.8
15.00	19.6	21.0	13.0	0.0137	21.0	12.9	0.0127	20.7
30.00	19.7	19.5	11.5	0.0137	19.5	13.1	0.0090	18.3
60.00	20.0	18.5	10.5	0.0136	18.5	13.3	0.0064	16.7
250.00	20.7	17.5	9.5	0.0135	17.5	13.4	0.0031	15.1
1440.00	20.1	14.0	6.0	0.0136	14.0	14.0	0.0013	9.5

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 2.5 (% coarse = % fine = 2.5)

SAND = 52.7 (% coarse = 2.2 % medium = 12.7 % fine = 37.8)

SILT = 28.7 % CLAY = 16.1

85= 0.48 D₆₀= 0.20 D₅₀= 0.14

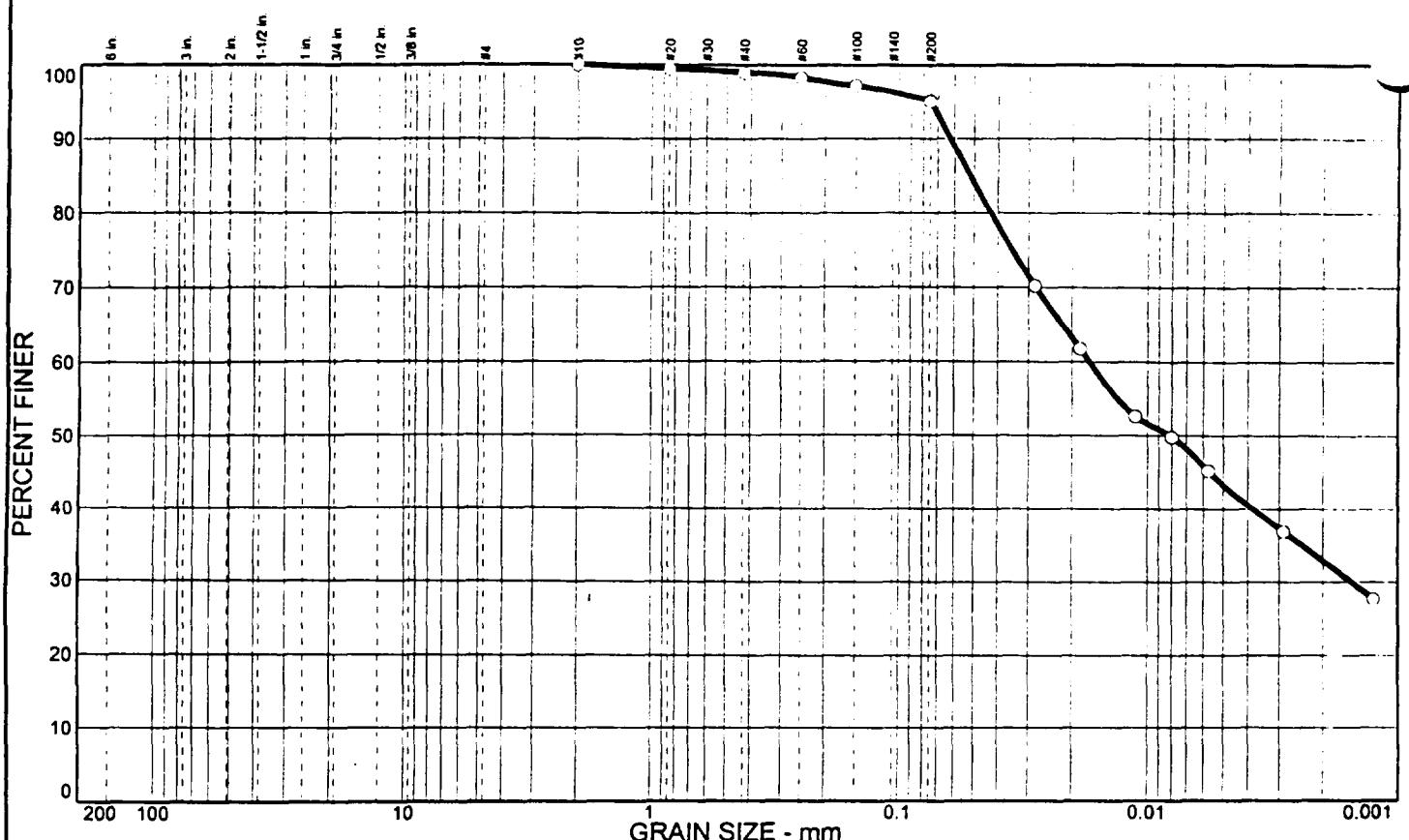
30= 0.03 D₁₅= 0.00 D₁₀= 0.00

c= 3.0821 C_u= 140.9908



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		4.9	51.8	43.3	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○	○	○
GRAIN SIZE			
D ₆₀	0.0170		
D ₃₀	0.0015		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○	○	○
#10	100.0		
#20	99.5		
#40	99.0		
#60	98.3		
#100	97.2		
#200	95.1		

SOIL DESCRIPTION
○ SILT, TRACE SAND

REMARKS:
○

○ Source: COC-7

Sample No.: FASED-CSE-S9-0-31"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-141

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-7
Sample No.: FASED-CSE-S9-0-31"
lev. or Depth:
Location:
Description: SILT, TRACE SAND
Liquid Limit: - - -
SCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 140.89

tare = 0.00

dry sample weight = 140.89

sample split on number 10 sieve

split sample data:

Sample and tare = 54.17 Tare = .00 Sample weight = 54.17

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.28	99.5
# 40	0.54	99.0
# 60	0.90	98.3
# 100	1.51	97.2
# 200	2.67	95.1

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 100.0

Weight of hydrometer sample: 54.17

Calculated biased weight= 54.17

Table of composite correction values:

Temp, deg C: 21.0 21.5

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.9	46.0	38.0	0.0135	46.0	8.8	0.0282	70.2
5.00	20.9	41.5	33.5	0.0135	41.5	9.5	0.0186	61.8
15.00	21.1	36.5	28.5	0.0135	36.5	10.3	0.0112	52.6
30.00	21.2	35.0	27.0	0.0134	35.0	10.6	0.0080	49.8
60.00	21.4	32.5	24.5	0.0134	32.5	11.0	0.0057	45.2
250.00	22.1	28.0	20.0	0.0133	28.0	11.7	0.0029	36.9
1440.00	21.1	23.0	15.0	0.0135	23.0	12.5	0.0013	27.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 4.9 (% coarse = % medium = 1.0 % fine = 3.9)

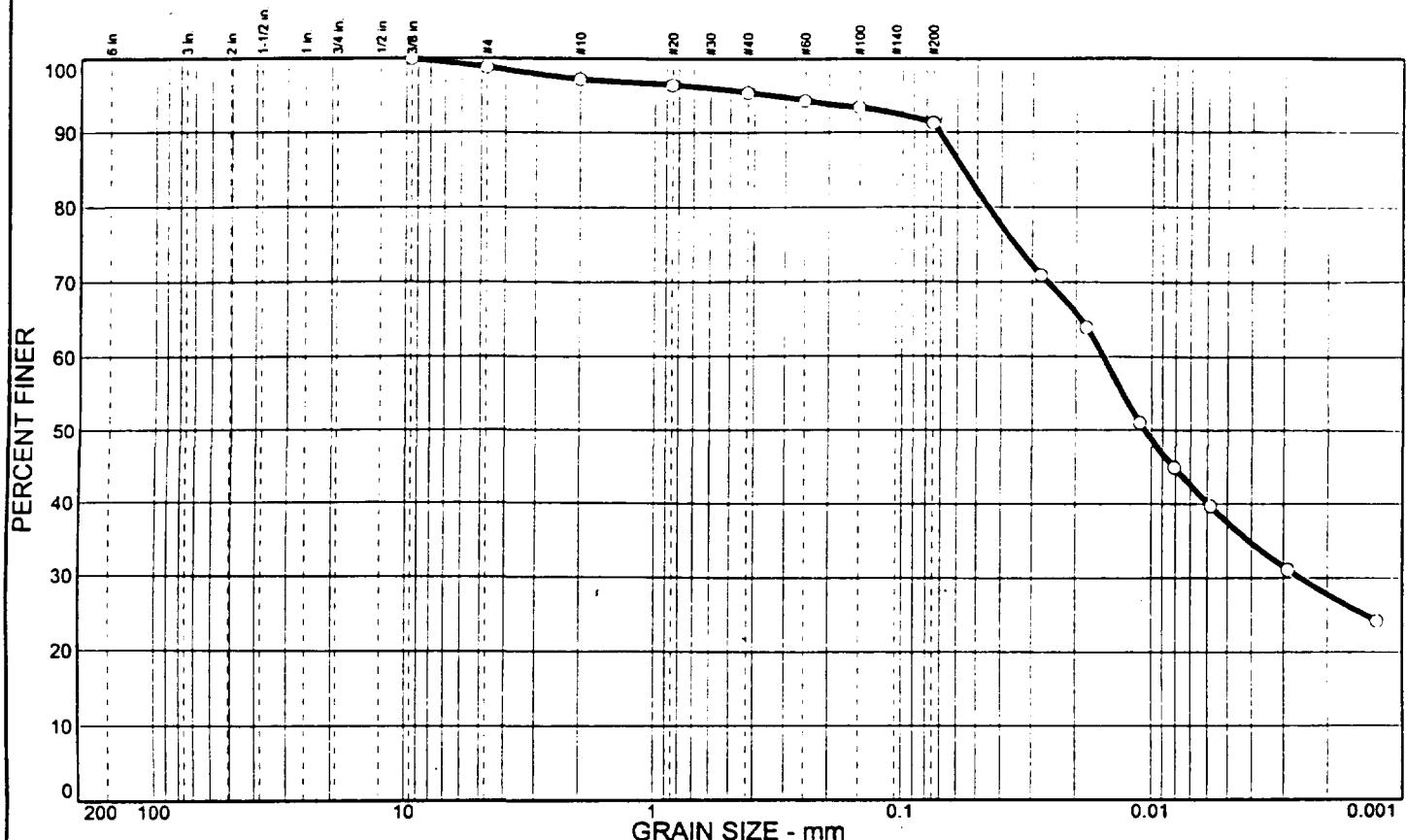
SILT = 51.8 (% CLAY = 43.3)

5= 0.05 D₆₀= 0.02 D₅₀= 0.01

0= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.2	7.5	53.7	37.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
<hr/>			
GRAIN SIZE			
D ₆₀	0.0155		
D ₃₀	0.0026		
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	98.8		
#10	97.2		
#20	96.4		
#40	95.4		
#60	94.3		
#100	93.4		
#200	91.3		

SOIL DESCRIPTION
○ SILT, TRACE SAND

REMARKS:

○ Source: COC-7

Sample No.: FASED-CSE-S10W-0-27"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-144

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-7
mple No.: FASED-CSE-S10W-0-27"
.ev. or Depth:
ocation:
escription: SILT, TRACE SAND
.liquid Limit: - - -
CS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

y sample and tare= 115.39
re = 0.00
y sample weight = 115.39
mple split on number 10 sieve
lit sample data:
Sample and tare = 56.25 Tare = .00 Sample weight = 56.25
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	1.42	98.8
# 10	3.25	97.2
# 20	0.49	96.4
# 40	1.07	95.4
# 60	1.68	94.3
# 100	2.23	93.4
# 200	3.44	91.3

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 97.2
ight of hydrometer sample: 56.25
lculated biased weight= 57.87
ble of composite correction values:
Temp, deg C: 24.0 18.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
meter type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.5	49.0	41.0	0.0136	49.0	8.3	0.0276	70.9
5.00	20.5	45.0	37.0	0.0136	45.0	8.9	0.0181	63.9
15.00	20.6	37.5	29.5	0.0135	37.5	10.1	0.0111	51.0
30.00	20.9	34.0	26.0	0.0135	34.0	10.7	0.0081	44.9
60.00	21.3	31.0	23.0	0.0134	31.0	11.2	0.0058	39.7
250.00	23.1	26.0	18.0	0.0131	26.0	12.0	0.0029	31.1
1440.00	20.9	22.0	14.0	0.0135	22.0	12.7	0.0013	24.2

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 1.2 (% coarse = % fine = 1.2)

SAND = 7.5 (% coarse = 1.6 % medium = 1.8 % fine = 4.1)

SILT = 53.7 % CLAY = 37.6

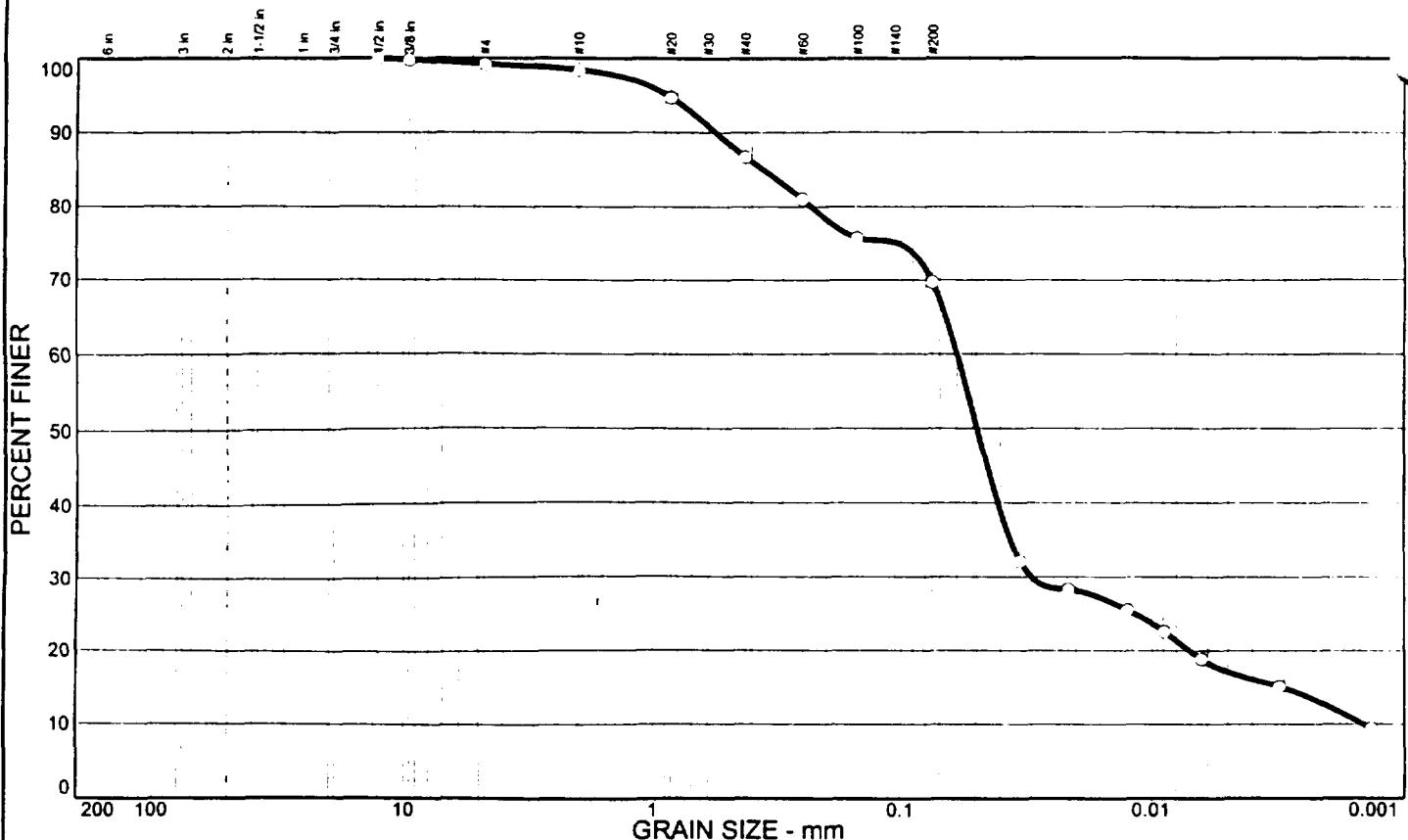
85= 0.06 D60= 0.02 D50= 0.01

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	0.8	29.5	52.6	17.1	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	#4	#10	#20		#40	#60	#100	
.5 .375	100.0 99.8				99.2 98.4	94.7	86.7	MEDIUM TO FINE SANDY SILT
<hr/>								
<hr/>								
GRAIN SIZE								
D ₆₀	0.0598							
D ₃₀	0.0301							
D ₁₀	0.0015							
<hr/>								
COEFFICIENTS								
C _c	10.40							
C _u	40.92							

Source: COC-7

Sample No.: FASED-CSE-S11W-0-22"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-147

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-7
mple No.: FASED-CSE-S11W-0-22"
ev. or Depth:
ocation:
escription: MEDIUM TO FINE SANDY SILT
iquid Limit: - - -
CS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
y sample and tare= 197.87
re = 0.00
y sample weight = 197.87
mple split on number 10 sieve
lit sample data:
Sample and tare = 52.17 Tare = .00 Sample weight = 52.17
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.5 inch	0.00	100.0
.375 inch	0.45	99.8
# 4	1.54	99.2
# 10	3.24	98.4
# 20	1.99	94.7
# 40	6.22	86.7
# 60	9.22	81.0
# 100	12.03	75.7
# 200	15.21	69.7

Hydrometer Analysis Data

paration sieve is #10
recent -#10 based upon complete sample= 98.4
ight of hydrometer sample: 52.17
lculated biased weight= 53.02
ble of composite correction values:
Temp, deg C: 20.5 22.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
ific gravity correction factor= 1.000
ometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.8	25.0	17.0	0.0135	25.0	12.2	0.0334	32.1
5.00	20.8	23.0	15.0	0.0135	23.0	12.5	0.0214	28.3
15.00	20.8	21.5	13.5	0.0135	21.5	12.8	0.0125	25.5
30.00	20.9	20.0	12.0	0.0135	20.0	13.0	0.0089	22.6
60.00	21.1	18.0	10.0	0.0135	18.0	13.3	0.0063	18.9
250.00	21.7	16.0	8.0	0.0134	16.0	13.7	0.0031	15.1
1400.00	21.1	13.0	5.0	0.0135	13.0	14.2	0.0014	9.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.8 (% coarse = % fine = 0.8)

SAND = 29.5 (% coarse = 0.8 % medium = 11.7 % fine = 17.0)

SILT = 52.6 % CLAY = 17.1

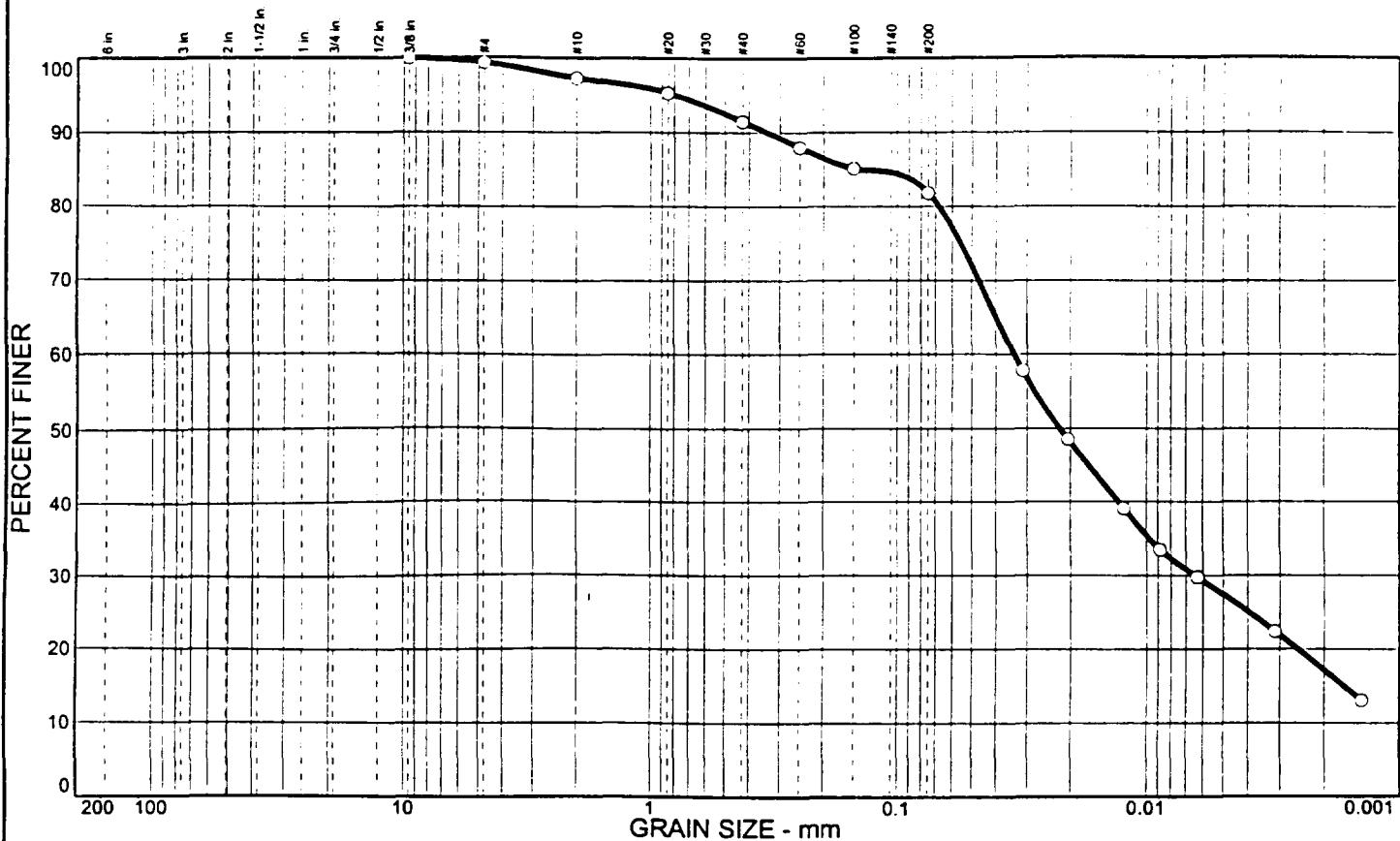
D₃₅= 0.36 D₆₀= 0.06 D₅₀= 0.05

D₁₀= 0.03 D₁₅= 0.00 D₁₀= 0.00

Cu= 10.4004 C_u= 40.9167

John G.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.7	17.5	54.3	27.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0337		
D ₃₀	0.0064		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.3		
#10	97.3		
#20	95.3		
#40	91.5		
#60	88.0		
#100	85.1		
#200	81.8		

SOIL DESCRIPTION
 SILT, WITH SAND

REMARKS:

Source: COC-1

Sample No.: FASED-CSE-S12-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-150

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-1

ample No.: FASED-CSE-S12-0-21"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 133.80

are = 0.00

ry sample weight = 133.80

ample split on number 10 sieve

plit sample data:

Sample and tare = 52.21 Tare = .00 Sample weight = 52.21

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.98	99.3
# 10	3.66	97.3
# 20	1.10	95.3
# 40	3.10	91.5
# 60	4.98	88.0
# 100	6.56	85.1
# 200	8.31	81.8

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 97.3

eight of hydrometer sample: 52.21

Calculated biased weight= 53.66

able of composite correction values:

Temp, deg C: 15.4 19.5

Comp. corr: -8.0 -8.0

nniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

ometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	17.9	39.0	31.0	0.0140	39.0	9.9	0.0312	57.8
5.00	18.1	34.0	26.0	0.0140	34.0	10.7	0.0205	48.5
15.00	18.1	29.0	21.0	0.0140	29.0	11.5	0.0123	39.1
30.00	18.5	26.0	18.0	0.0139	26.0	12.0	0.0088	33.5
60.00	18.7	24.0	16.0	0.0139	24.0	12.4	0.0063	29.8
250.00	19.5	20.0	12.0	0.0137	20.0	13.0	0.0031	22.4
1440.00	15.4	15.0	7.0	0.0145	15.0	13.8	0.0014	13.1

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.7 (% coarse = % fine = 0.7)

SAND = 17.5 (% coarse = 2.0 % medium = 5.8 % fine = 9.7)

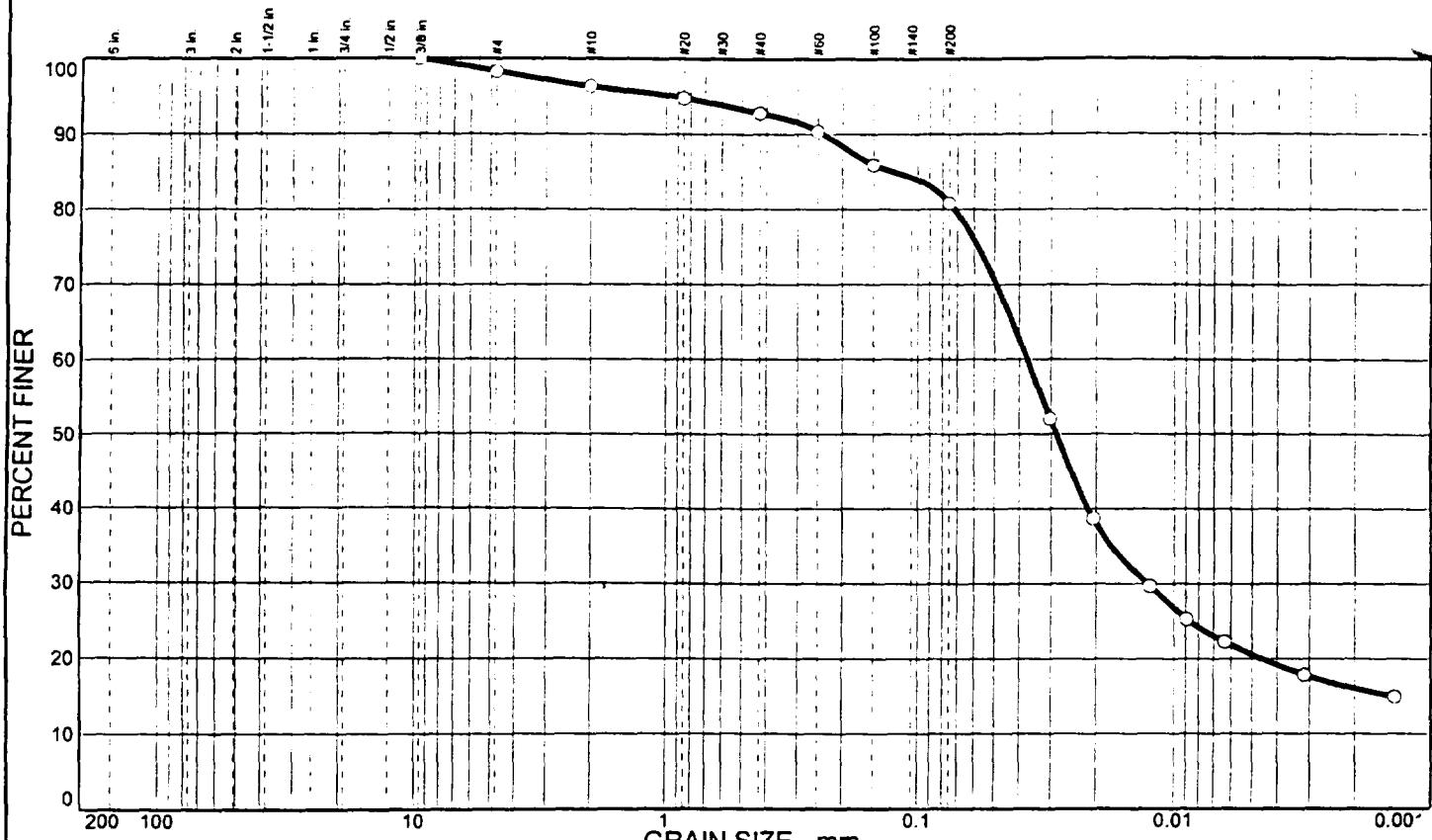
SILT = 54.3 % CLAY = 27.5

D₅= 0.14 D₆₀= 0.03 D₅₀= 0.02

D₀= 0.01 D₁₅= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.7	17.5	60.2	20.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	98.3			○ SILT, WITH SAND
GRAIN SIZE								
D ₆₀	0.0371			#10	96.3			
D ₃₀	0.0126			#20	94.8			
D ₁₀				#40	92.8			
COEFFICIENTS								
C _c				#60	90.4			
C _u				#100	85.9			
REMARKS:								
○								

○ Source: COC-1

Sample No.: FASED-CSE-S13E-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-153

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSE-S13E-0-21"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Weight sample and tare= 111.03
Tare = 0.00
Weight sample weight = 111.03
mple split on number 10 sieve

lit sample data:

Sample and tare = 64.77 Tare = .00 Sample weight = 64.77

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	1.87	98.3
# 10	4.06	96.3
# 20	1.02	94.8
# 40	2.39	92.8
# 60	3.97	90.4
# 100	6.99	85.9
# 200	10.44	80.8

Hydrometer Analysis Data

paration sieve is #10
recent -#10 based upon complete sample= 96.3
ight of hydrometer sample: 64.77
lculated biased weight= 67.26
ole of composite correction values:
Temp, deg C: 15.4 19.5
Comp. corr: -8.0 -8.0

discus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
rometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	17.8	43.0	35.0	0.0140	43.0	9.2	0.0302	52.0
5.00	17.9	34.0	26.0	0.0140	34.0	10.7	0.0205	38.7
15.00	18.0	28.0	20.0	0.0140	28.0	11.7	0.0124	29.7
30.00	18.2	25.0	17.0	0.0140	25.0	12.2	0.0089	25.3
60.00	18.6	23.0	15.0	0.0139	23.0	12.5	0.0063	22.3
250.00	19.5	20.0	12.0	0.0137	20.0	13.0	0.0031	17.8
1440.00	15.4	18.0	10.0	0.0145	18.0	13.3	0.0014	14.9

Fractional Components

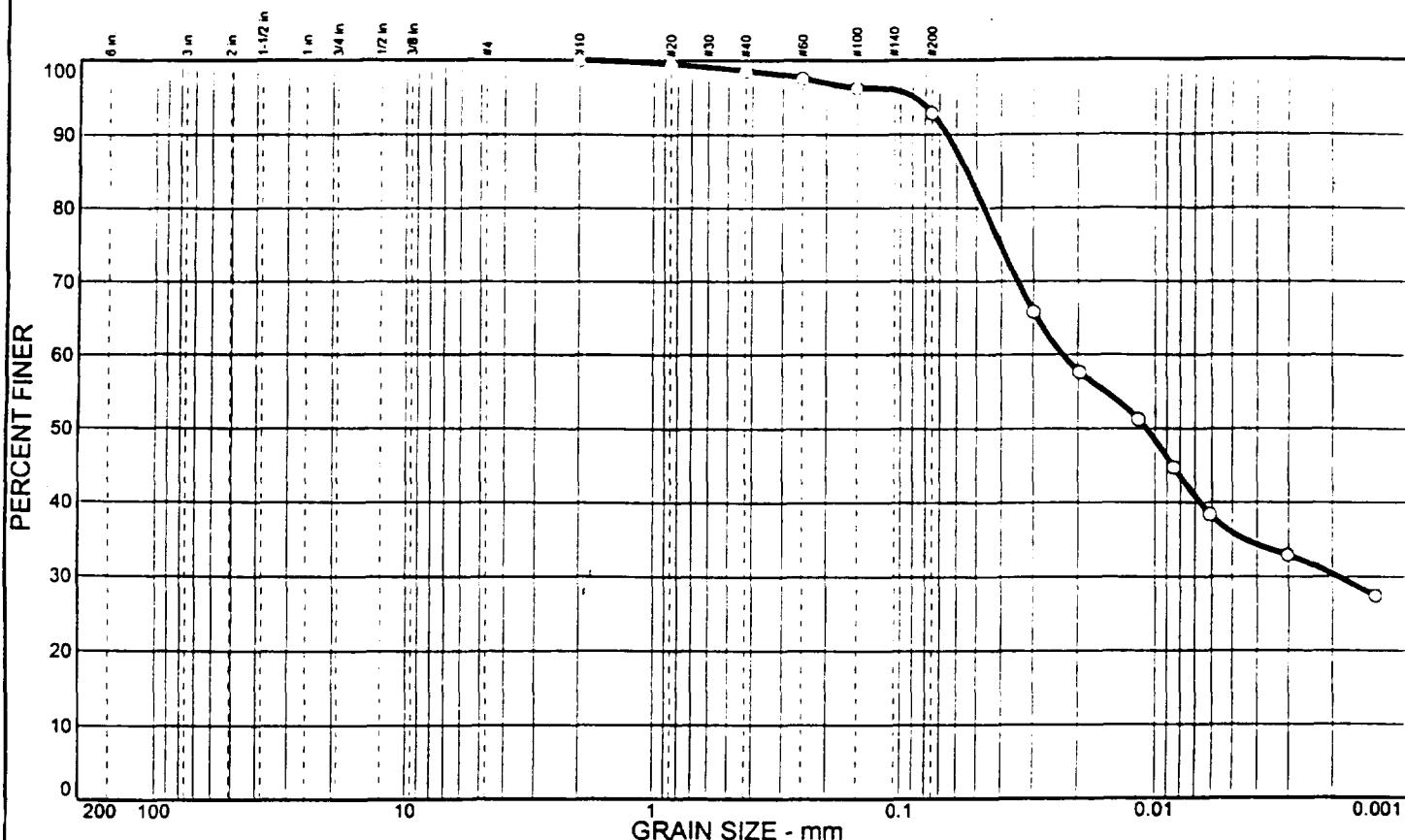
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 1.7 (% coarse = % fine = 1.7)
 SAND = 17.5 (% coarse = 2.0 % medium = 3.5 % fine = 12.0)
 SILT = 60.2 % CLAY = 20.6

85= 0.13 D₆₀= 0.04 D₅₀= 0.03
 30= 0.01 D₁₅= 0.00

Jal 7c
 MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		7.1	56.9	36.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0229		
D ₃₀	0.0019		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-1

SIEVE number size	PERCENT FINER		
	○		
#10	100.0		
#20	99.5		
#40	98.6		
#60	97.6		
#100	96.3		
#200	92.9		

SOIL DESCRIPTION
○ SILT, TRACE SAND
REMARKS:
○

Sample No.: FASED-CSE-S14W-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-156

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-1
Sample No.: FASED-CSE-S14W-0-31"
Elev. or Depth:
Location:
Description: SILT, TRACE SAND
Liquid Limit: - - -
ISCS Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 126.17
tare = 0.00
dry sample weight = 126.17
sample split on number 10 sieve
split sample data:

Sample and tare = 54.72 Tare = .00 Sample weight = 54.72

Cumulative weight retained tare= .00

: for cumulative weight retained= .00

sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.25	99.5
# 40	0.75	98.6
# 60	1.33	97.6
# 100	2.02	96.3
# 200	3.91	92.9

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 100.0
Weight of hydrometer sample: 54.72
Calculated biased weight= 54.72
Table of composite correction values:
Temp, deg C: 15.4 19.5
Comp. corr: -8.0 -8.0

Meniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	17.9	44.0	36.0	0.0140	44.0	9.1	0.0299	65.8
5.00	17.9	39.5	31.5	0.0140	39.5	9.8	0.0196	57.6
15.00	18.1	36.0	28.0	0.0140	36.0	10.4	0.0116	51.2
30.00	18.3	32.5	24.5	0.0139	32.5	11.0	0.0084	44.8
60.00	18.7	29.0	21.0	0.0139	29.0	11.5	0.0061	38.4
250.00	19.5	26.0	18.0	0.0137	26.0	12.0	0.0030	32.9
1440.00	15.4	23.0	15.0	0.0145	23.0	12.5	0.0013	27.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

: COBBLES = % GRAVEL =

: SAND = 7.1 (% coarse = % medium = 1.4 % fine = 5.7)

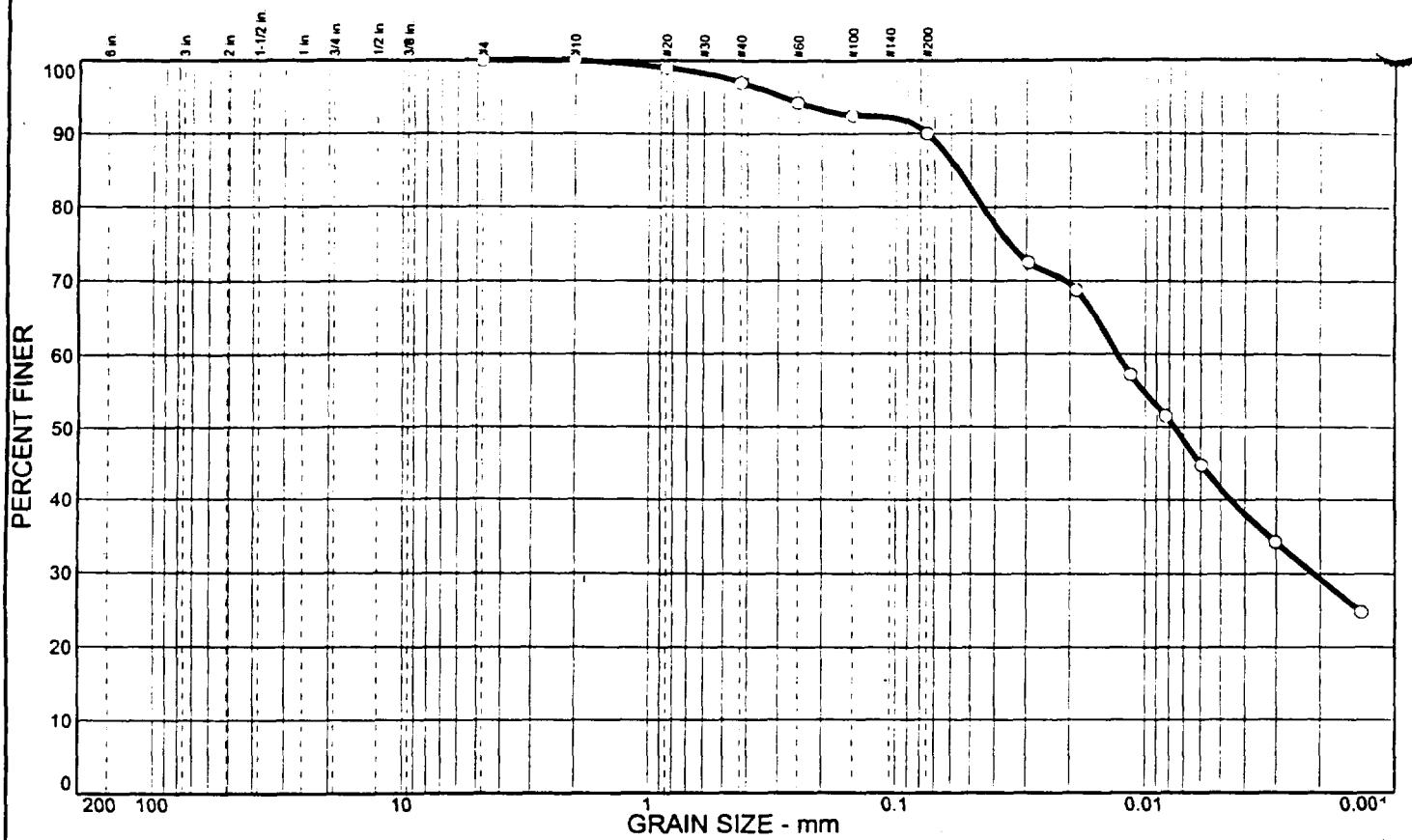
: SILT = 56.9 (% CLAY = 36.0)

85= 0.05 D60= 0.02 D50= 0.01

30= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		10.0	48.5	41.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0129		
D ₃₀	0.0021		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-1

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	100.0		
#20	99.0		
#40	97.0		
#60	94.3		
#100	92.5		
#200	90.0		

SOIL DESCRIPTION
○ SILT, TRACE SAND
REMARKS:
○

Sample No.: FASED-CSE-S15-0-19"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-159

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSE-S15-0-19"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

My sample and tare= 113.74
ure = 0.00
My sample weight = 113.74
ample split on number 10 sieve
plit sample data:
Sample and tare = 52.41 Tare = .00 Sample weight = 52.41
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent retained	finer
# 4	0.00	100.0	
# 10	0.00	100.0	
# 20	0.55	99.0	
# 40	1.57	97.0	
# 60	3.00	94.3	
# 100	3.94	92.5	
# 200	5.22	90.0	

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 52.41
lculated biased weight= 52.41
ble of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
ometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.0	46.0	38.0	0.0140	46.0	8.8	0.0293	72.5
5.00	18.0	44.0	36.0	0.0140	44.0	9.1	0.0189	68.7
15.00	18.1	38.0	30.0	0.0140	38.0	10.1	0.0114	57.2
30.00	18.3	35.0	27.0	0.0139	35.0	10.6	0.0083	51.5
60.00	18.7	31.5	23.5	0.0139	31.5	11.1	0.0060	44.8
250.00	19.4	26.0	18.0	0.0137	26.0	12.0	0.0030	34.3
1440.00	15.4	21.0	13.0	0.0145	21.0	12.9	0.0014	24.8

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 10.0 (% coarse = 0.0 % medium = 3.0 % fine = 7.0)

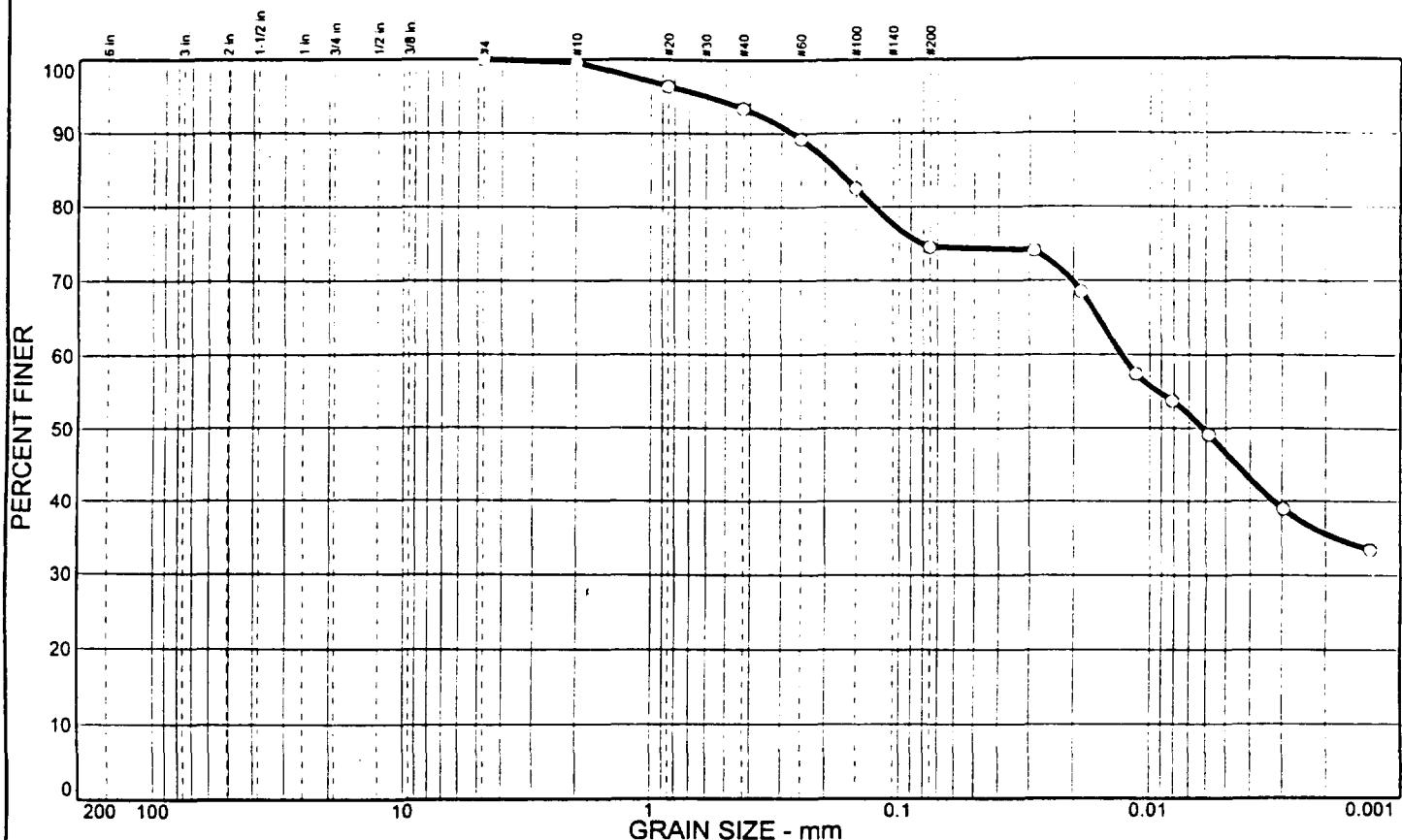
SILT = 48.5 % CLAY = 41.5

D₅= 0.06 D₆₀= 0.01 D₅₀= 0.01

D₀= 0.00

J. L. M.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		25.5	27.9	46.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0129		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.6		
#20	96.4		
#40	93.4		
#60	89.2		
#100	82.5		
#200	74.5		

SOIL DESCRIPTION
○ CLAY, WITH SAND

REMARKS:
○

○ Source: COC-5

Sample No.: FASED-CSE-S16E-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-162

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-5

ample No.: FASED-CSE-S16E-0-21"

ev. or Depth:

Sample Length (in./cm.):

cation:

escription: CLAY, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

y sample and tare= 154.87

re = 0.00

y sample weight = 154.87

mple split on number 10 sieve

lit sample data:

Sample and tare = 53.76 Tare = .00 Sample weight = 53.76

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.61	99.6
# 20	1.73	96.4
# 40	3.37	93.4
# 60	5.60	89.2
# 100	9.25	82.5
# 200	13.55	74.5

Hydrometer Analysis Data

paration sieve is #10

cent -#10 based upon complete sample= 99.6

ght of hydrometer sample: 53.76

culated biased weight= 53.98

ole of composite correction values:

'emp, deg C: 15.5 19.5

'omp. corr: -8.0 -8.0

iscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

meter type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.3	48.0	40.0	0.0139	48.0	8.4	0.0286	74.1
5.00	18.3	45.0	37.0	0.0139	45.0	8.9	0.0186	68.5
15.00	18.4	39.0	31.0	0.0139	39.0	9.9	0.0113	57.4
30.00	18.6	37.0	29.0	0.0139	37.0	10.2	0.0081	53.7
60.00	18.8	34.5	26.5	0.0139	34.5	10.6	0.0058	49.1
250.00	19.5	29.0	21.0	0.0137	29.0	11.5	0.0029	38.9
1440.00	15.4	26.0	18.0	0.0145	26.0	12.0	0.0013	33.4

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

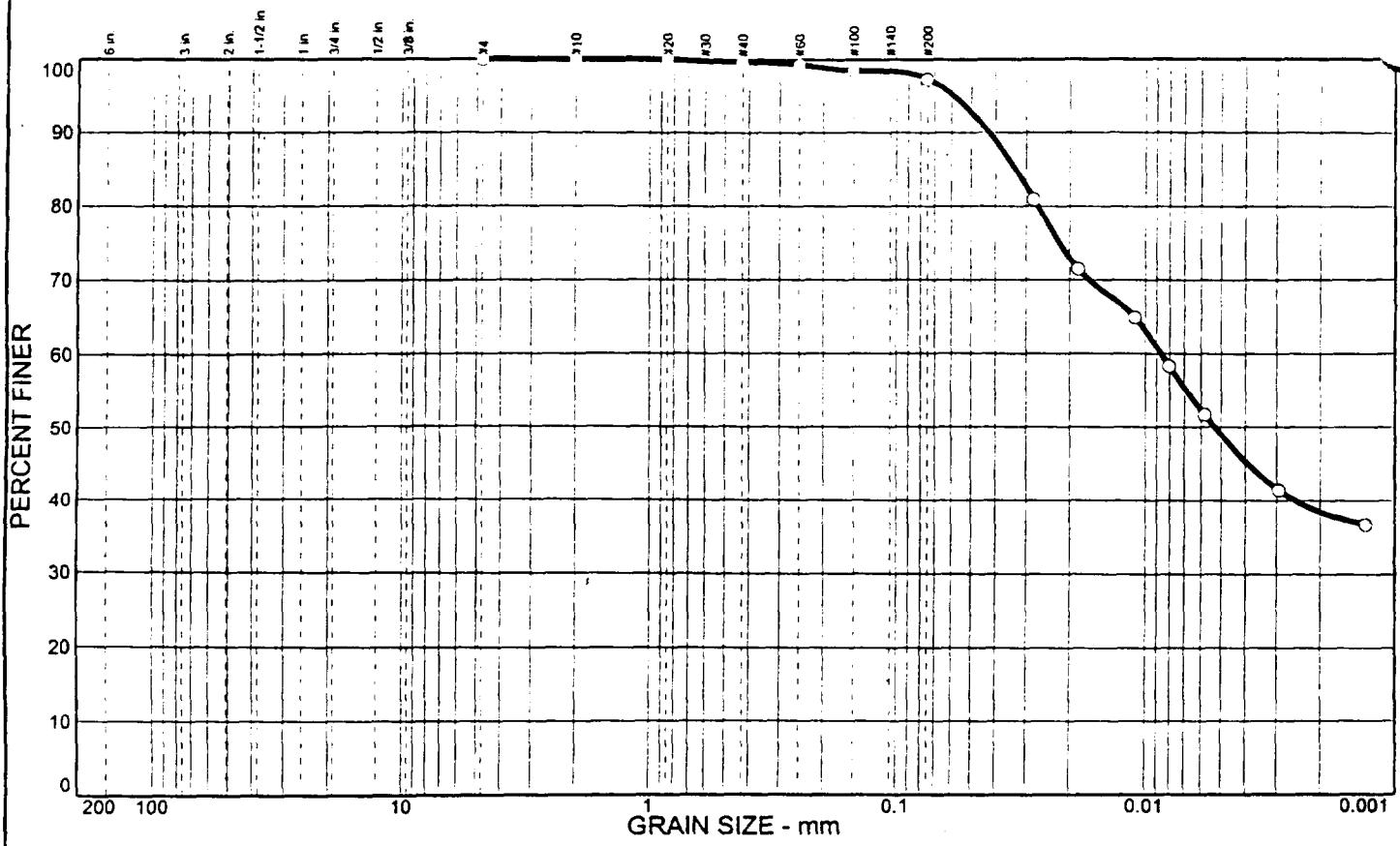
SAND = 25.5 (% coarse = 0.4 % medium = 6.2 % fine = 18.9)

SILT = 27.9 % CLAY = 46.6

35= 0.18 D₆₀= 0.01 D₅₀= 0.01

Jalay
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		2.7	48.3	49.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0087		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-1

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	100.0		
#20	100.0		
#40	99.7		
#60	99.3		
#100	98.5		
#200	97.3		

SOIL DESCRIPTION
○ CLAY, TRACE SAND
REMARKS:
○

Sample No.: FASED-CSE-S17-0-28"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-165

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSE-S17-0-28"
lev. or Depth:
ocation:
escription: CLAY, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 156.55
re = 0.00
y sample weight = 156.55
mple split on number 10 sieve
lit sample data:

Sample and tare = 53.16 Tare = .00 Sample weight = 53.16

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.02	100.0
# 40	0.17	99.7
# 60	0.40	99.3
# 100	0.80	98.5
# 200	1.42	97.3

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 53.16
lculated biased weight= 53.16
ble of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
rometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.0	51.0	43.0	0.0140	51.0	7.9	0.0279	80.9
5.00	18.0	46.0	38.0	0.0140	46.0	8.8	0.0185	71.5
15.00	18.1	42.5	34.5	0.0140	42.5	9.3	0.0110	64.9
30.00	18.2	39.0	31.0	0.0140	39.0	9.9	0.0080	58.3
60.00	18.6	35.5	27.5	0.0139	35.5	10.5	0.0058	51.7
250.00	19.3	30.0	22.0	0.0138	30.0	11.4	0.0029	41.4
1440.00	15.2	27.5	19.5	0.0145	27.5	11.8	0.0013	36.7

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

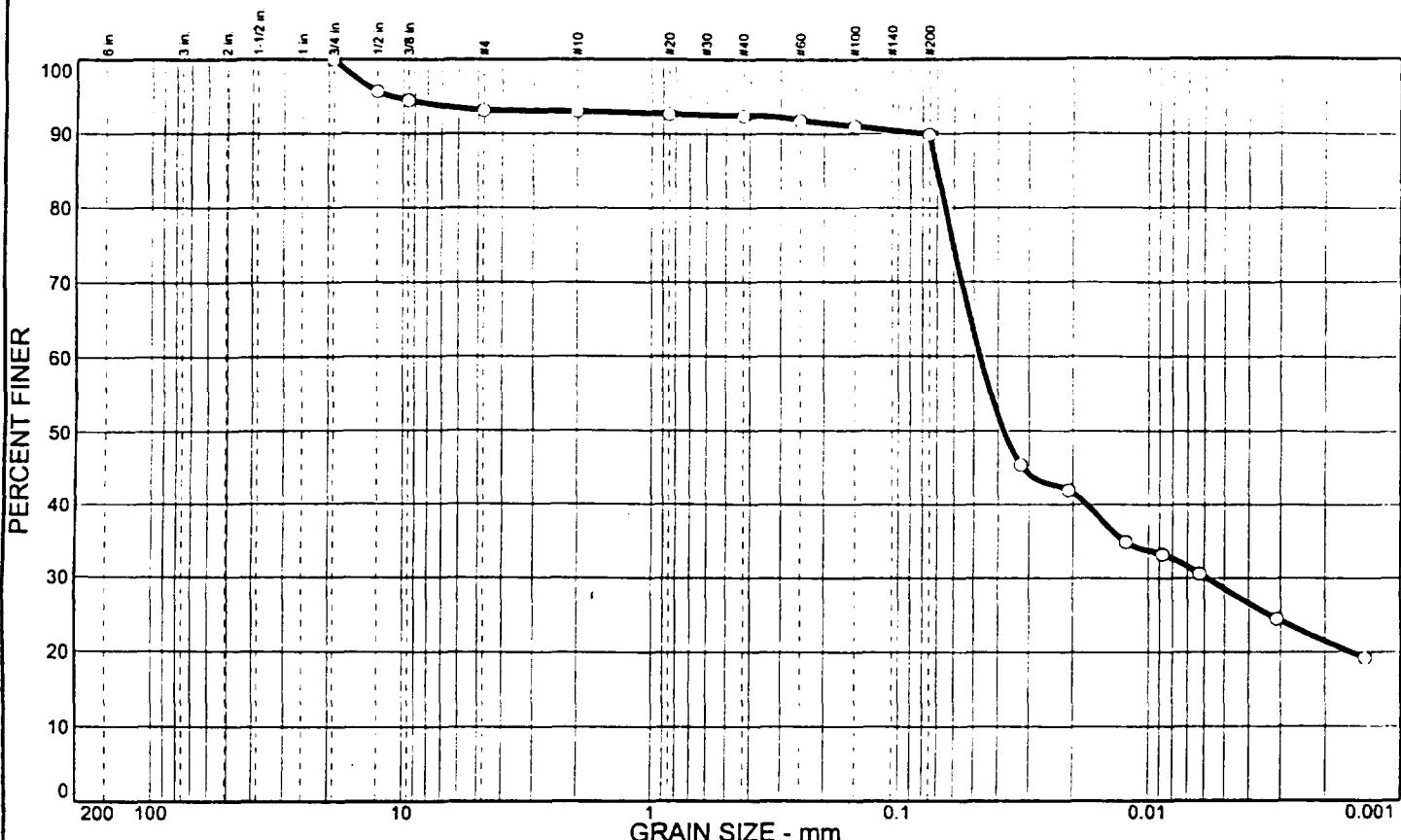
SAND = 2.7 (% coarse = 0.0 % medium = 0.3 % fine = 2.4)

SILT = 48.3 % CLAY = 49.0

85= 0.03 D60= 0.01 D50= 0.01

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	6.9	3.2	61.3	28.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, TRACE LIMESTONE
	○				○			
.75	100.0			#4	93.1			
.5	95.7			#10	93.0			
.375	94.5			#20	92.7			
				#40	92.4			
				#60	91.8			
				#100	91.0			
				#200	89.9			
GRAIN SIZE								
D ₆₀	0.0470							
D ₃₀	0.0058							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-5

Sample No.: FASED-CSE-S18-0-25"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-168

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-5
ample No.: FASED-CSE-S18-0-25"
lev. or Depth:
ocation:
escription: SILT, TRACE LIMESTONE
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
ry sample and tare= 129.70
are = 0.00
ry sample weight = 129.70
ample split on number 10 sieve
plit sample data:
Sample and tare = 53.25 Tare = .00 Sample weight = 53.25
Cumulative weight retained tare= .00
for cumulative weight retained= .00
ieve Cumul. Wt. Percent
retained finer
.75 inch 0.00 100.0
.5 inch 5.60 95.7
.375 inch 7.09 94.5
4 9.01 93.1
10 9.09 93.0
20 0.18 92.7
40 0.37 92.4
60 0.69 91.8
100 1.13 91.0
200 1.80 89.9

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 93.0
eight of hydrometer sample: 53.25
alculated biased weight= 57.26
able of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

'scus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

267A-169

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	34.0	26.0	0.0140	34.0	10.7	0.0323	45.4
5.00	18.3	32.0	24.0	0.0139	32.0	11.0	0.0207	41.9
15.00	18.4	28.0	20.0	0.0139	28.0	11.7	0.0123	34.9
30.00	18.5	27.0	19.0	0.0139	27.0	11.9	0.0087	33.2
60.00	18.6	25.5	17.5	0.0139	25.5	12.1	0.0062	30.6
250.00	19.5	22.0	14.0	0.0137	22.0	12.7	0.0031	24.5
1440.00	15.4	19.0	11.0	0.0145	19.0	13.2	0.0014	19.2

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 6.9 (% coarse = % fine = 6.9)

SAND = 3.2 (% coarse = 0.1 % medium = 0.6 % fine = 2.5)

SILT = 61.3 % CLAY = 28.6

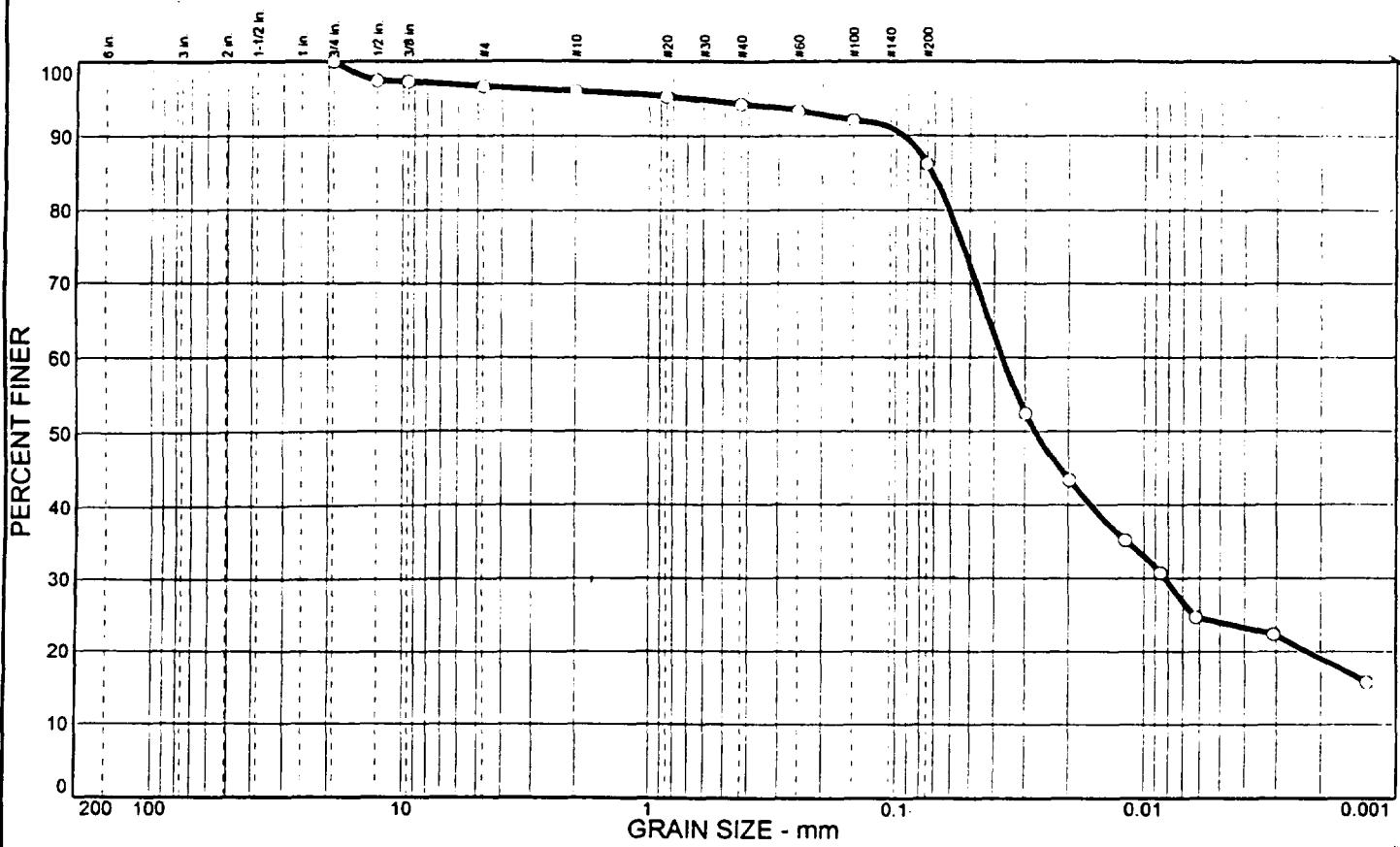
85= 0.07 D₆₀= 0.05 D₅₀= 0.04

30= 0.01



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	3.4	10.4	62.2	24.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.75	100.0		
.5	97.4		
.375	97.3		

GRAIN SIZE			
D ₆₀	0.0370		
D ₃₀	0.0082		
D ₁₀			

COEFFICIENTS			
C _c			
C _u			

○ Source: COC-8

Sample No.: FASED-CSE-S19E-0-28"

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Thompson Engineering

Project No.: 1999-00-0774

267A-171

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-8

ample No.: FASED-CSE-S19E-0-28"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 144.57

are = 0.00

ry sample weight = 144.57

ample split on number 10 sieve

plit sample data:

Sample and tare = 64.19 Tare = .00 Sample weight = 64.19

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.5 inch	3.72	97.4
.375 inch	3.91	97.3
# 4	4.90	96.6
# 10	5.86	96.0
# 20	0.44	95.3
# 40	1.13	94.3
# 60	1.76	93.4
# 100	2.63	92.1
# 200	6.54	86.2

Hydrometer Analysis Data

paration sieve is #10

ercent -#10 based upon complete sample= 96.0

ight of hydrometer sample: 64.19

lculated biased weight= 66.86

able of composite correction values:

Temp, deg C: 20.0 18.0

Comp. corr: -8.0 -8.0

scus correction only= 0

ific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

267A-172

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.9	43.0	35.0	0.0138	43.0	9.2	0.0297	52.4
5.00	18.9	37.0	29.0	0.0138	37.0	10.2	0.0198	43.4
15.00	19.1	31.5	23.5	0.0138	31.5	11.1	0.0119	35.2
30.00	19.3	28.5	20.5	0.0138	28.5	11.6	0.0086	30.7
60.00	19.5	24.5	16.5	0.0137	24.5	12.3	0.0062	24.7
250.00	19.6	23.0	15.0	0.0137	23.0	12.5	0.0031	22.4
1440.00	19.6	18.5	10.5	0.0137	18.5	13.3	0.0013	15.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 3.4 (% coarse = % fine = 3.4)

SAND = 10.4 (% coarse = 0.6 % medium = 1.7 % fine = 8.1)

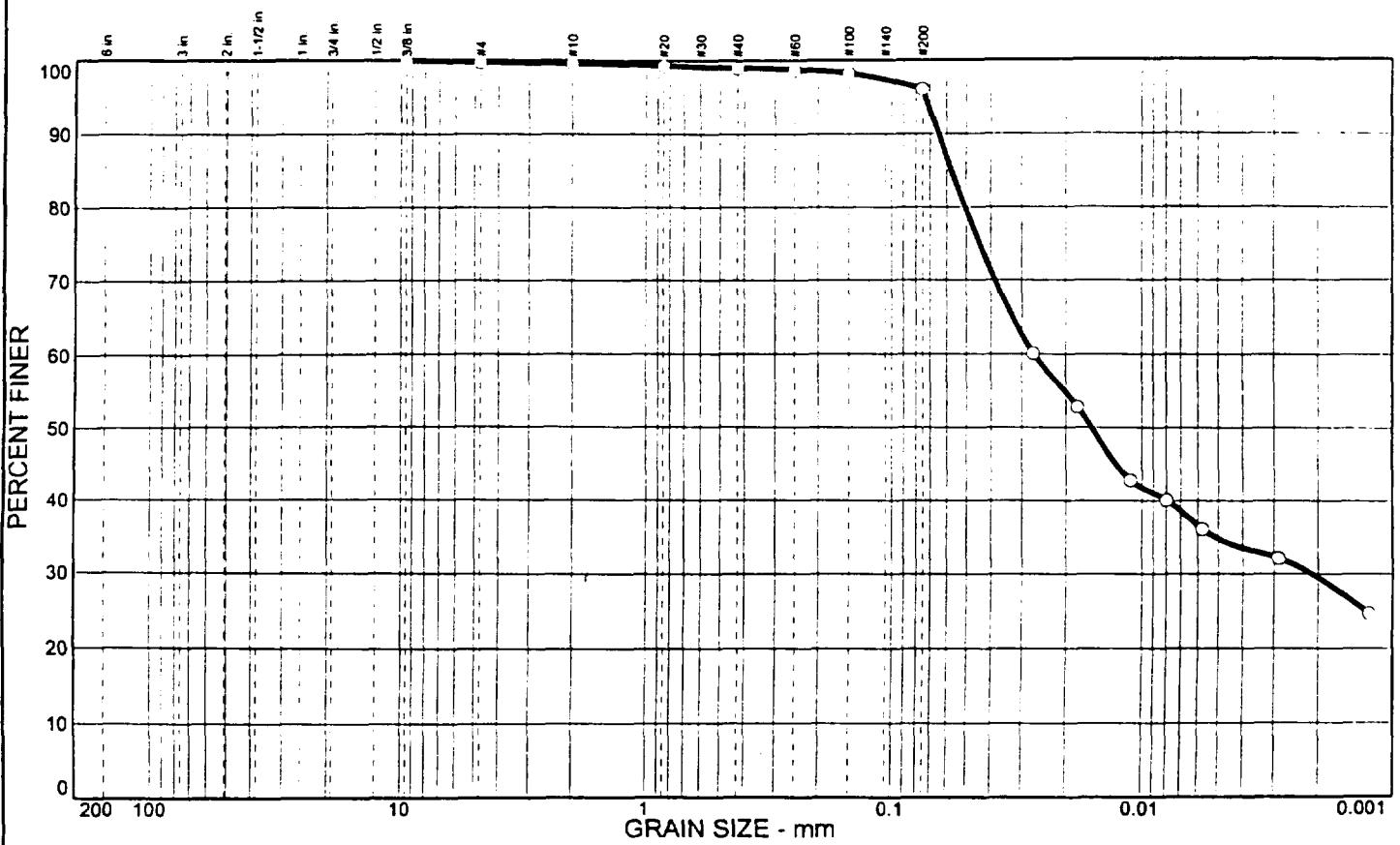
SILT = 62.2 % CLAY = 24.0

D₃₅ = 0.07 D₆₀ = 0.04 D₅₀ = 0.03

D₁₀ = 0.01

Daly
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.3	3.6	61.3	34.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0268		
D ₃₀	0.0021		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-8

SIEVE number size	PERCENT FINER		
	○		
#4	99.7		
#10	99.6		
#20	99.3		
#40	99.0		
#60	98.7		
#100	98.2		
#200	96.1		

SOIL DESCRIPTION
○ SILT, TRACE SAND

REMARKS:
○

Sample No.: FASED-CSE-S20E-0-33"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-174

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-8
Sample No.: FASED-CSE-S20E-0-33"
Level or Depth: Sample Length (in./cm.):
Location:
Description: SILT, TRACE SAND
Liquid Limit: - - - Plastic Limit: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial
Dry sample and tare = 162.14
Tare = 0.00
Dry sample weight = 162.14
Sample split on number 10 sieve
List sample data:
Sample and tare = 74.54 Tare = .00 Sample weight = 74.54
Cumulative weight retained tare = .00
for cumulative weight retained = .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.56	99.7
# 10	0.73	99.6
# 20	0.26	99.3
# 40	0.48	99.0
# 60	0.69	98.7
# 100	1.05	98.2
# 200	2.59	96.1

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 99.6
Weight of hydrometer sample: 74.54
Calculated biased weight= 74.84
Table of composite correction values:
Temp, deg C: 20.0 18.0
Comp. corr: -8.0 -8.0

Nuisance correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.1	53.0	45.0	0.0138	53.0	7.6	0.0269	60.1
5.00	19.2	47.5	39.5	0.0138	47.5	8.5	0.0180	52.8
15.00	19.2	40.0	32.0	0.0138	40.0	9.7	0.0111	42.8
30.00	19.5	38.0	30.0	0.0137	38.0	10.1	0.0080	40.1
60.00	19.7	35.0	27.0	0.0137	35.0	10.6	0.0057	36.1
250.00	20.0	32.0	24.0	0.0136	32.0	11.0	0.0029	32.1
1440.00	20.0	26.5	18.5	0.0136	26.5	11.9	0.0012	24.7

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 0.3 (% coarse = % fine = 0.3)

SAND = 3.6 (% coarse = 0.1 % medium = 0.6 % fine = 2.9)

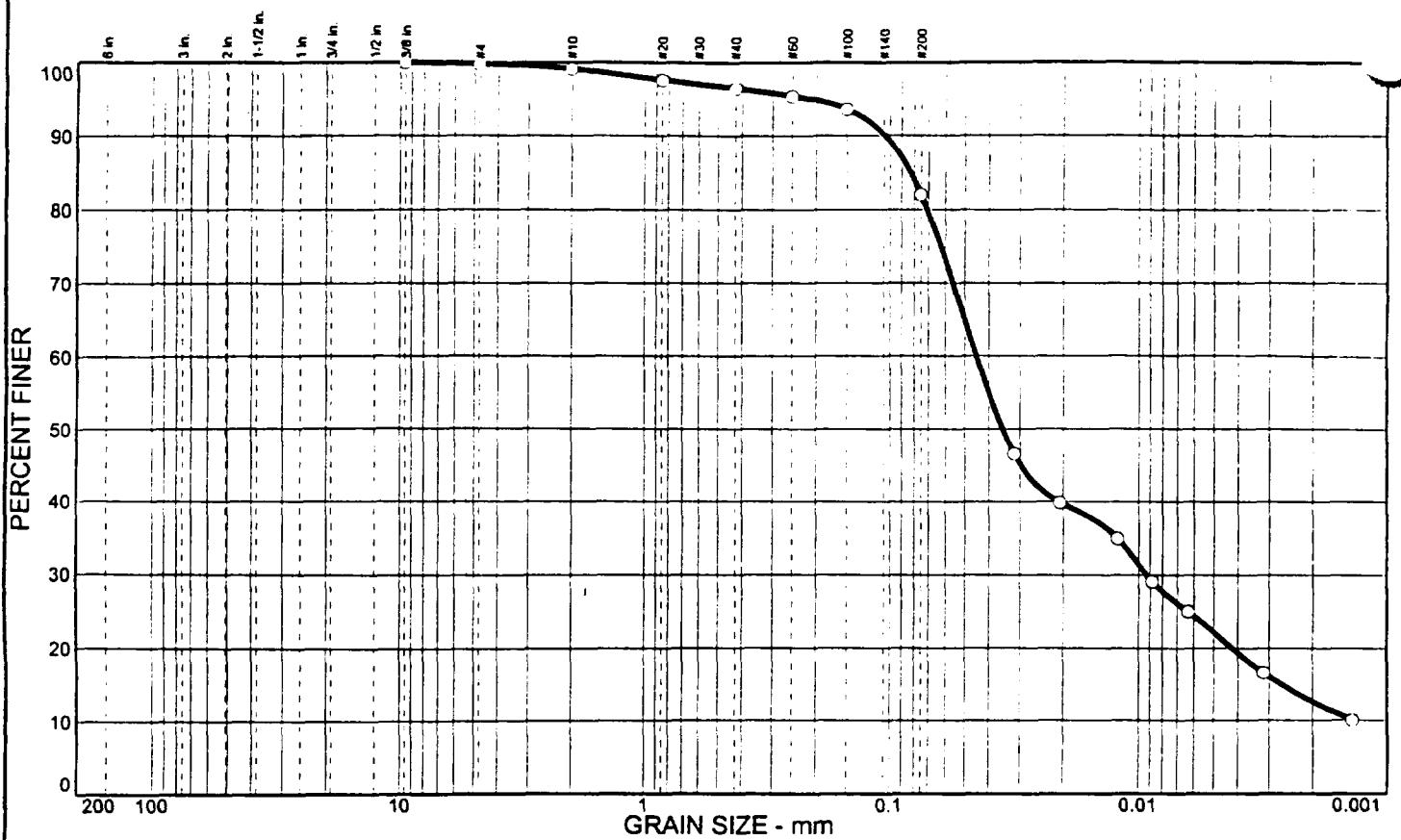
SILT = 61.3 % CLAY = 34.8

85= 0.06 D60= 0.03 D50= 0.02

30= 0.00

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.2	17.8	59.8	22.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0449		
D ₃₀	0.0093		
D ₁₀	0.0014		
COEFFICIENTS			
C _c	1.39		
C _u	32.52		

SIEVE number size	PERCENT FINER		
	○		
#4	99.8		
#10	99.1		
#20	97.6		
#40	96.5		
#60	95.4		
#100	93.6		
#200	82.0		

SOIL DESCRIPTION
○ SILT, WITH SAND

REMARKS:
○

○ Source: COC-9

Sample No.: FASED-CSE-S21-0-28"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-177

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-9

Sample No.: FASED-CSE-S21-0-28"

lev. or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 128.64

tare = 0.00

dry sample weight = 128.64

sample split on number 10 sieve

split sample data:

Sample and tare = 59.55 Tare = .00 Sample weight = 59.55

Cumulative weight retained tare= .00

: for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.26	99.8
# 10	1.18	99.1
# 20	0.90	97.6
# 40	1.58	96.5
# 60	2.25	95.4
# 100	3.29	93.6
# 200	10.25	82.0

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.1

Weight of hydrometer sample: 59.55

Calculated biased weight= 60.09

Table of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

Eniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.8	36.0	28.0	0.0139	36.0	10.4	0.0316	46.6
5.00	18.8	32.0	24.0	0.0139	32.0	11.0	0.0206	39.9
15.00	18.8	29.0	21.0	0.0139	29.0	11.5	0.0121	35.0
30.00	18.9	25.5	17.5	0.0138	25.5	12.1	0.0088	29.1
60.00	18.9	23.0	15.0	0.0138	23.0	12.5	0.0063	25.0
250.00	20.1	18.0	10.0	0.0136	18.0	13.3	0.0031	16.6
1440.00	18.0	14.0	6.0	0.0140	14.0	14.0	0.0014	10.0

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.2 (% coarse = % fine = 0.2)

SAND = 17.8 (% coarse = 0.7 % medium = 2.6 % fine = 14.5)

SILT = 59.8 % CLAY = 22.2

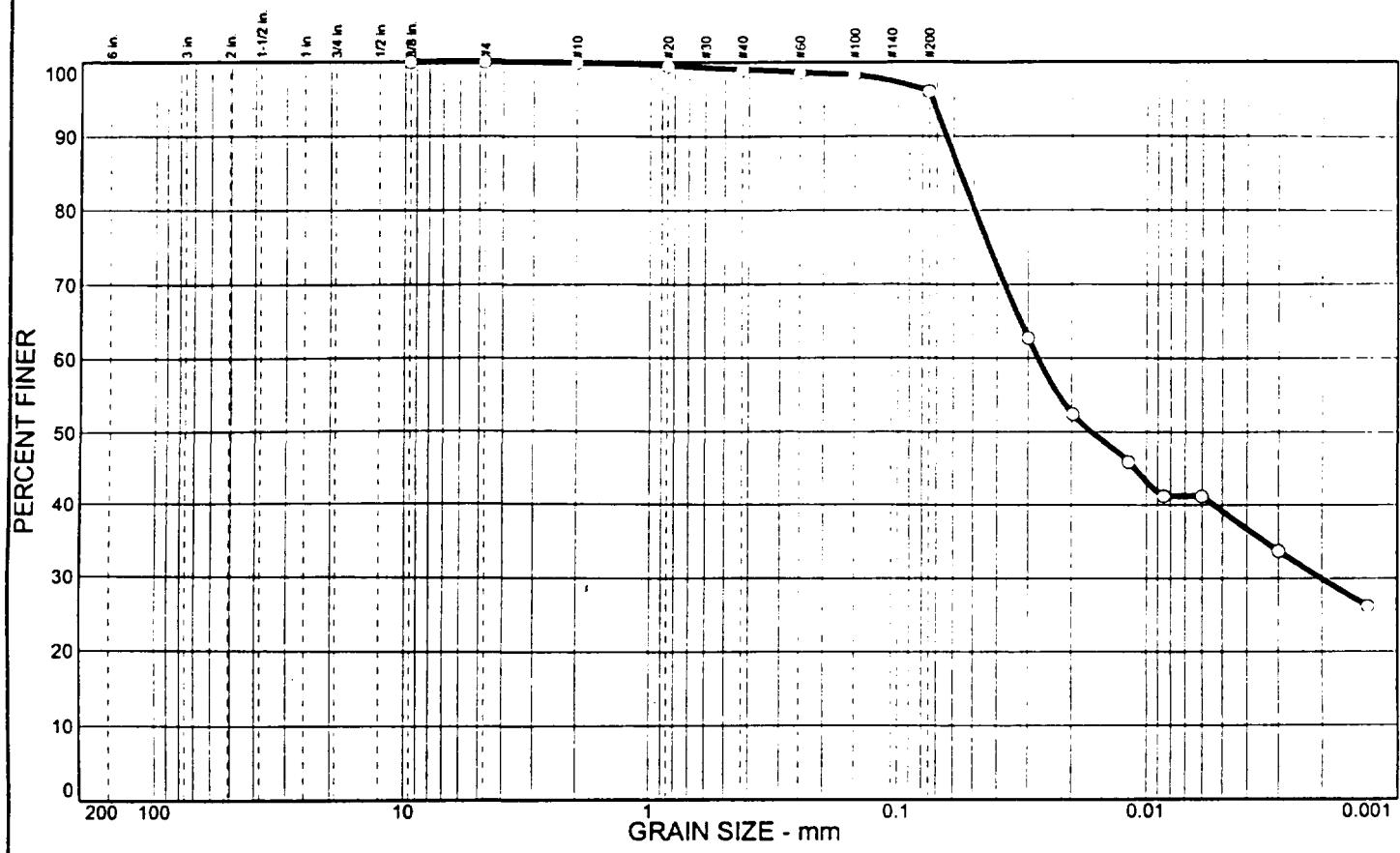
D₅= 0.08 D₆₀= 0.04 D₅₀= 0.04

D₁₀= 0.01 D₁₅= 0.00 D₁₀= 0.00

Cu= 1.3856 C_u= 32.5248

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○			4.0	56.8	39.2	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
<hr/>			
○	0.0273		
○	0.0020		
○	0.0010		
<hr/>			
GRAIN SIZE			
D ₆₀	0.0273		
D ₃₀	0.0020		
D ₁₀	0.0010		
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.5		
#40	99.0		
#60	98.6		
#100	98.3		
#200	96.0		

SOIL DESCRIPTION
 SILT, TRACE SAND

REMARKS:

○ Source: COC-9

Sample No.: FASED-CSE-S22E-0-26"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-180

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
,ect Number: 1999-00-0774

Sample Data

ource: COC-9
ample No.: FASED-CSE-S22E-0-26"
.ev. or Depth:
ocation:
escription: SILT, TRACE SAND
.uid Limit: - - -
CS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

y sample and tare= 115.06
re = 0.00
y sample weight = 115.06
mple split on number 10 sieve
lit sample data:

Sample and tare = 53.36 Tare = .00 Sample weight = 53.36

Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.12	99.9
# 20	0.23	99.5
# 40	0.50	99.0
# 60	0.70	98.6
# 100	0.88	98.3
# 200	2.09	96.0

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 99.9
ight of hydrometer sample: 53.36
lculated biased weight= 53.41
ble of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
-ometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.5	41.5	33.5	0.0137	41.5	9.5	0.0299	62.7
5.00	19.4	36.0	28.0	0.0137	36.0	10.4	0.0198	52.4
15.00	19.4	32.5	24.5	0.0137	32.5	11.0	0.0118	45.9
30.00	19.2	30.0	22.0	0.0138	30.0	11.4	0.0085	41.2
60.00	19.3	30.0	22.0	0.0138	30.0	11.4	0.0060	41.2
250.00	20.3	26.0	18.0	0.0136	26.0	12.0	0.0030	33.7
1440.00	18.0	22.0	14.0	0.0140	22.0	12.7	0.0013	26.2

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 4.0 (% coarse = 0.1 % medium = 0.9 % fine = 3.0)

SILT = 56.8 % CLAY = 39.2

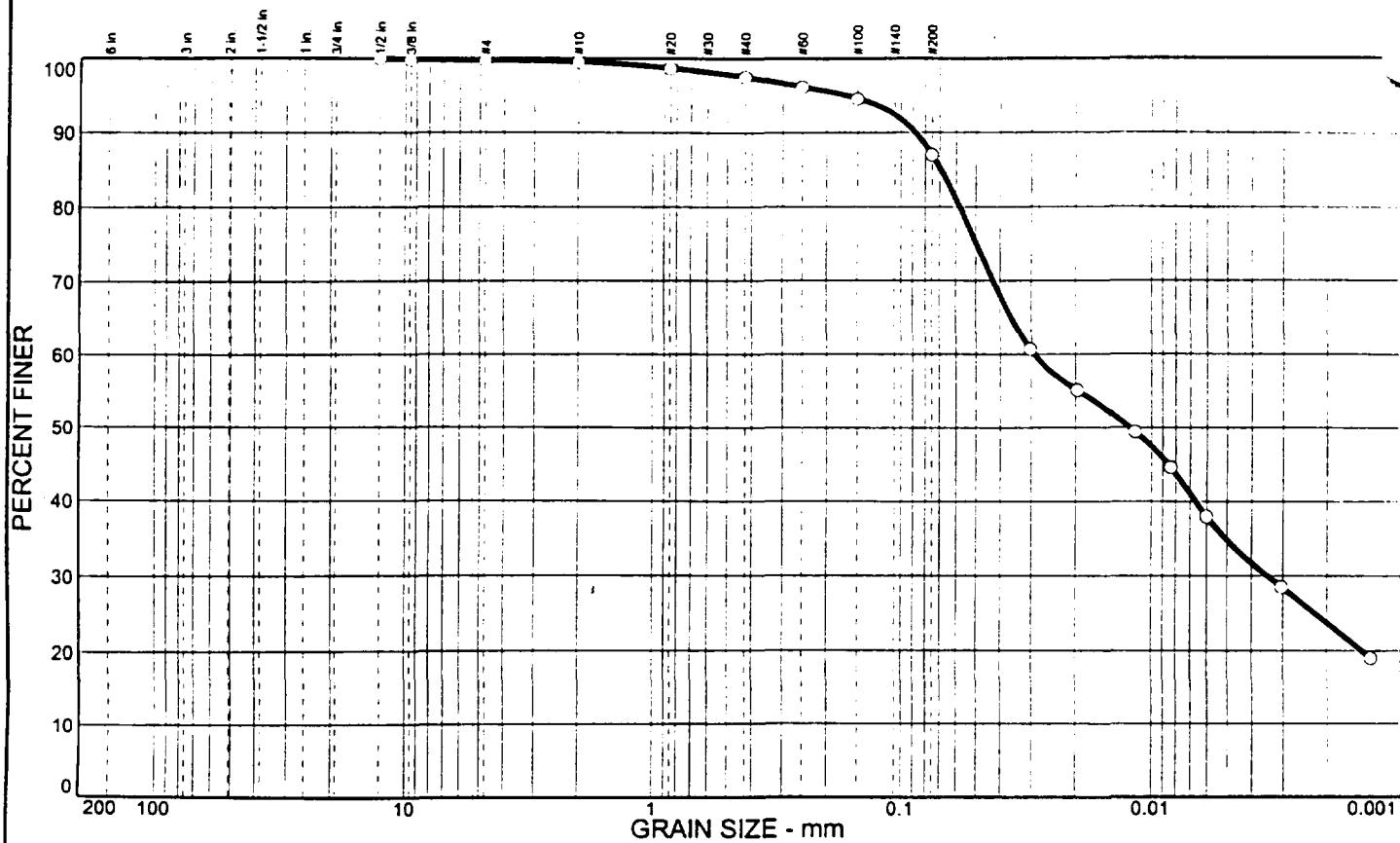
85= 0.06 D60= 0.03 D50= 0.02

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.3	12.7	52.2	34.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0 99.8		
GRAIN SIZE			
D ₆₀	0.0292		
D ₃₀	0.0035		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.7		
#10	99.5		
#20	98.7		
#40	97.5		
#60	96.2		
#100	94.6		
#200	87.0		

SOIL DESCRIPTION
○ SILT, LITTLE SAND

REMARKS:
○

○ Source: COC-9

Sample No.: FASED-CSE-S23-0-23"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-183

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

Source: COC-9
Sample No.: FASED-CSE-S23-0-23"
Level or Depth:
Location:
Description: SILT, LITTLE SAND
Liquid Limit: - - -
SCS Classification: - - -
Testing Remarks:
Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

dry sample and tare = 103.20
tare = 0.00
dry sample weight = 103.20
sample split on number 10 sieve
split sample data:

Sample and tare = 52.42 Tare = .00 Sample weight = 52.42

Cumulative weight retained tare= .00

for cumulative weight retained= .00

size	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	0.17	99.8
# 4	0.33	99.7
# 10	0.49	99.5
# 20	0.41	98.7
# 40	1.08	97.5
# 60	1.72	96.2
# 100	2.60	94.6
# 200	6.60	87.0

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 99.5
Weight of hydrometer sample: 52.42
Calculated biased weight= 52.68
Table of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

eniscus correction only= 0
ifric gravity of solids= 2.65
ifric gravity correction factor= 1.000
urrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.6	40.0	32.0	0.0137	40.0	9.7	0.0303	60.7
5.00	19.6	37.0	29.0	0.0137	37.0	10.2	0.0196	55.1
15.00	19.7	34.0	26.0	0.0137	34.0	10.7	0.0116	49.4
30.00	19.5	31.5	23.5	0.0137	31.5	11.1	0.0084	44.6
60.00	20.0	28.0	20.0	0.0136	28.0	11.7	0.0060	38.0
250.00	20.5	23.0	15.0	0.0136	23.0	12.5	0.0030	28.5
1440.00	19.1	18.0	10.0	0.0138	18.0	13.3	0.0013	19.0

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200

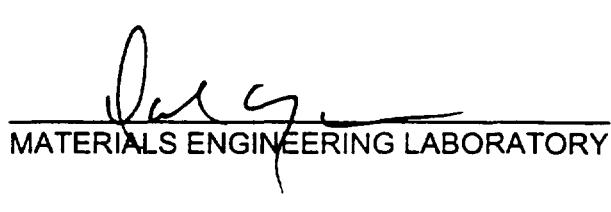
COBBLES = % GRAVEL = 0.3 (% coarse = % fine = 0.3)

SAND = 12.7 (% coarse = 0.2 % medium = 2.0 % fine = 10.5)

SILT = 52.2 % CLAY = 34.8

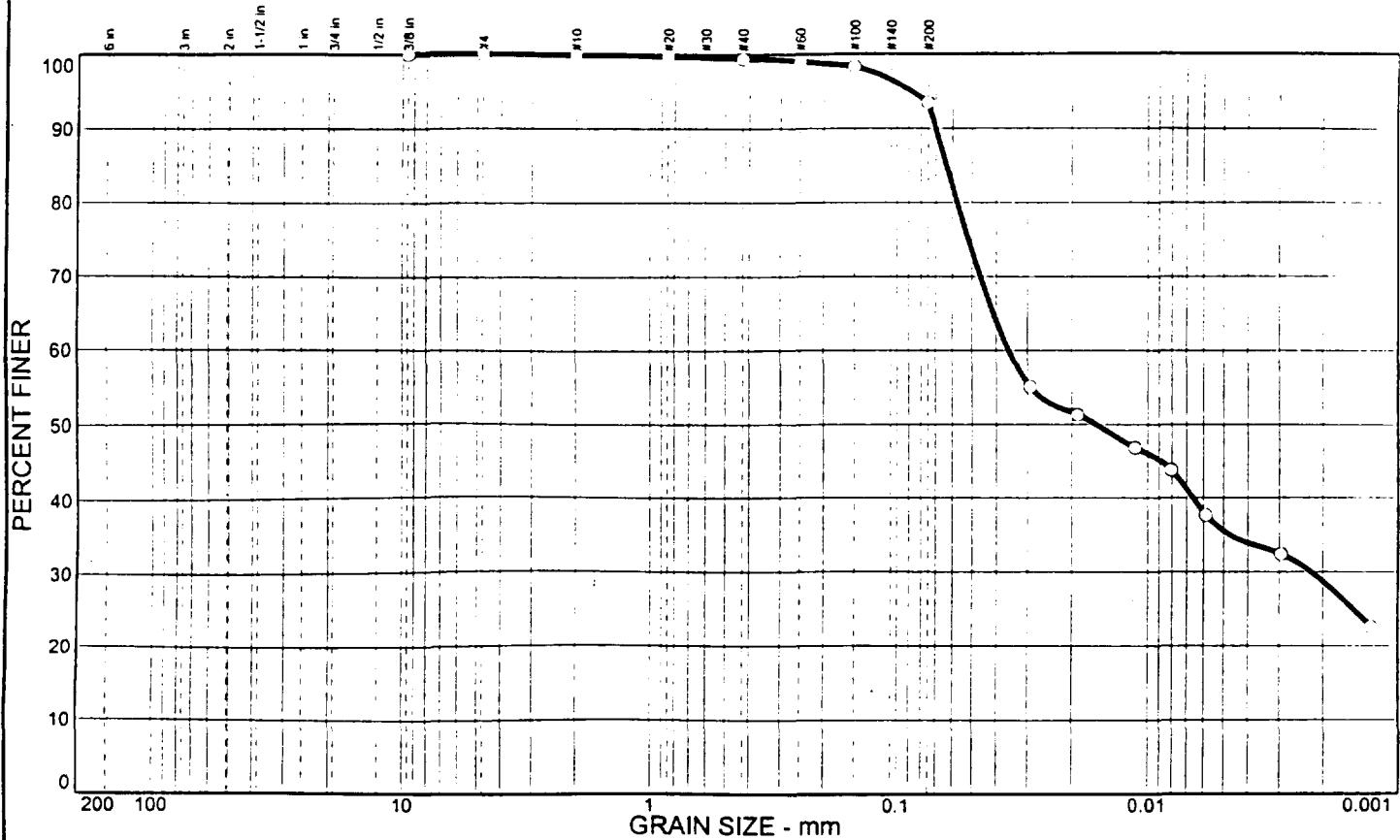
D₃₅ = 0.07 D₆₀ = 0.03 D₅₀ = 0.01

D₀ = 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		6.5	57.9	35.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0355		
D ₃₀	0.0022		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.7		
#40	99.4		
#60	99.0		
#100	98.3		
#200	93.5		

SOIL DESCRIPTION
 SILT, TRACE SAND

REMARKS:

Source: COC-8

Sample No.: FASED-CSE-S24W-0-27"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-186

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-8
ample No.: FASED-CSE-S24W-0-27"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 170.92
are = 0.00
ry sample weight = 170.92
ample split on number 10 sieve
plit sample data:

Sample and tare = 66.21 Tare = .00 Sample weight = 66.21

Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.16	99.9
# 20	0.15	99.7
# 40	0.33	99.4
# 60	0.58	99.0
# 100	1.06	98.3
# 200	4.25	93.5

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.9
ight of hydrometer sample: 66.21
lculated biased weight= 66.28
able of composite correction values:
Temp, deg C: 20.0 18.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
ific gravity correction factor= 1.000
.ometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.2	44.5	36.5	0.0138	44.5	9.0	0.0292	55.1
5.00	19.1	42.0	34.0	0.0138	42.0	9.4	0.0189	51.3
15.00	19.2	39.0	31.0	0.0138	39.0	9.9	0.0112	46.8
30.00	19.2	37.0	29.0	0.0138	37.0	10.2	0.0080	43.8
60.00	19.4	33.0	25.0	0.0137	33.0	10.9	0.0059	37.7
250.00	19.5	29.5	21.5	0.0137	29.5	11.5	0.0029	32.4
1440.00	19.6	23.0	15.0	0.0137	23.0	12.5	0.0013	22.6

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 6.5 (% coarse = 0.1 % medium = 0.5 % fine = 5.9)

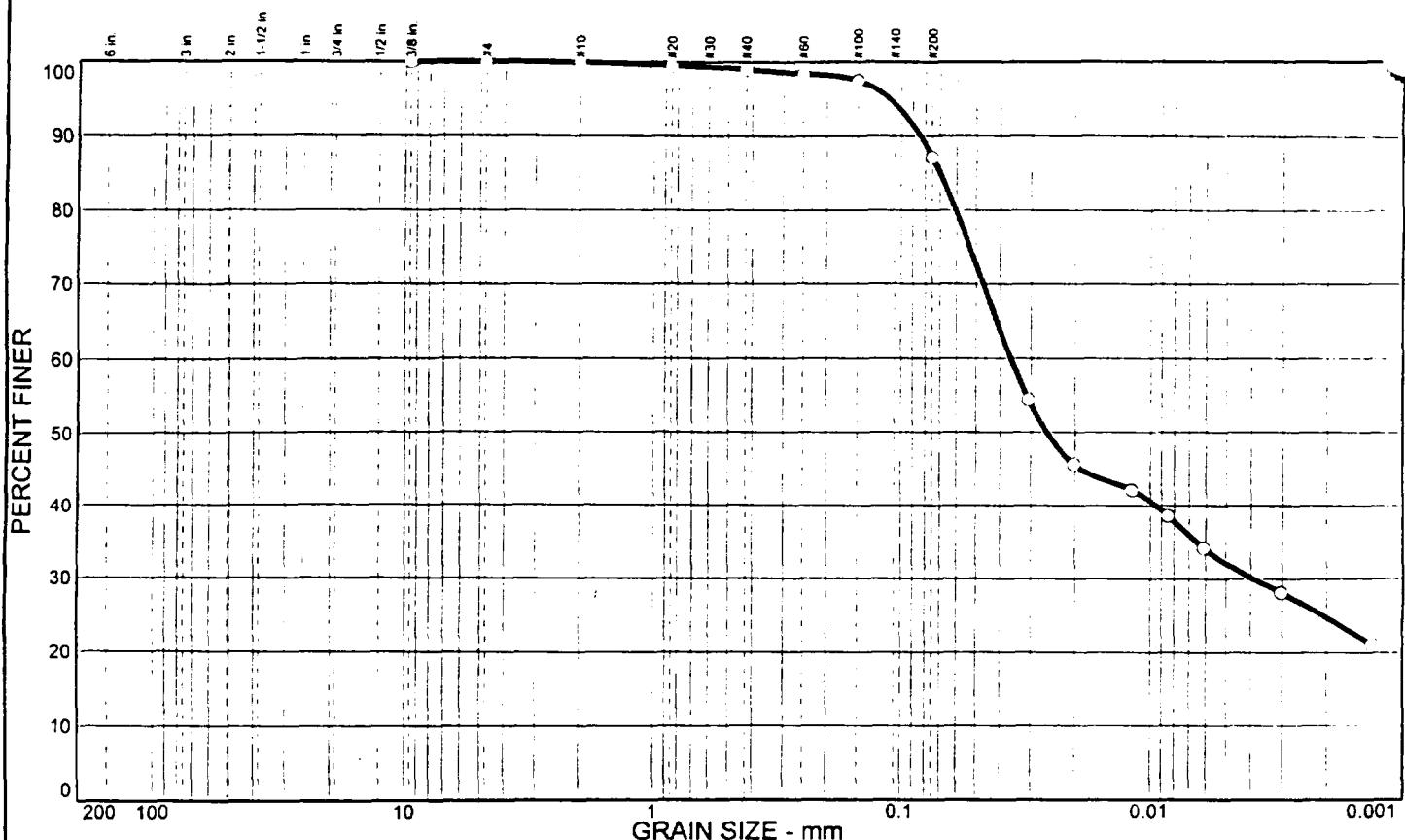
SILT = 57.9 % CLAY = 35.6

35= 0.06 D60= 0.04 D50= 0.02

30= 0.00

J. C. L.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		12.9	55.0	32.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0362		
D ₃₀	0.0039		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-9

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.9		
#20	99.5		
#40	99.0		
#60	98.4		
#100	97.4		
#200	87.1		

SOIL DESCRIPTION
 SILT, LITTLE SAND

REMARKS:

Sample No.: FASED-CSE-S25W-0-29"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-189

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-9
ample No.: FASED-CSE-S25W-0-29"
lev. or Depth:
ocation:
escription: SILT, LITTLE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 141.01
are = 0.00
ry sample weight = 141.01
mple split on number 10 sieve
plit sample data:

Sample and tare = 56.95 Tare = .00 Sample weight = 56.95

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.18	99.9
# 20	0.24	99.5
# 40	0.52	99.0
# 60	0.88	98.4
# 100	1.43	97.4
# 200	7.31	87.1

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.9
ight of hydrometer sample: 56.95
lculated biased weight= 57.01
able of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
pecific gravity of solids= 2.65
ifric gravity correction factor= 1.000
ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.3	39.0	31.0	0.0138	39.0	9.9	0.0306	54.4
5.00	19.3	34.0	26.0	0.0138	34.0	10.7	0.0202	45.6
15.00	19.1	32.0	24.0	0.0138	32.0	11.0	0.0118	42.1
30.00	19.3	30.0	22.0	0.0138	30.0	11.4	0.0085	38.6
60.00	19.3	27.5	19.5	0.0138	27.5	11.8	0.0061	34.2
250.00	20.2	24.0	16.0	0.0136	24.0	12.4	0.0030	28.1
1440.00	18.0	20.0	12.0	0.0140	20.0	13.0	0.0013	21.1

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

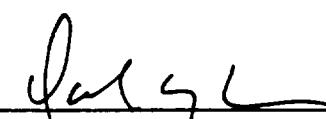
COBBLES = % GRAVEL =

SAND = 12.9 (% coarse = 0.1 % medium = 0.9 % fine = 11.9)

SILT = 55.0 % CLAY = 32.1

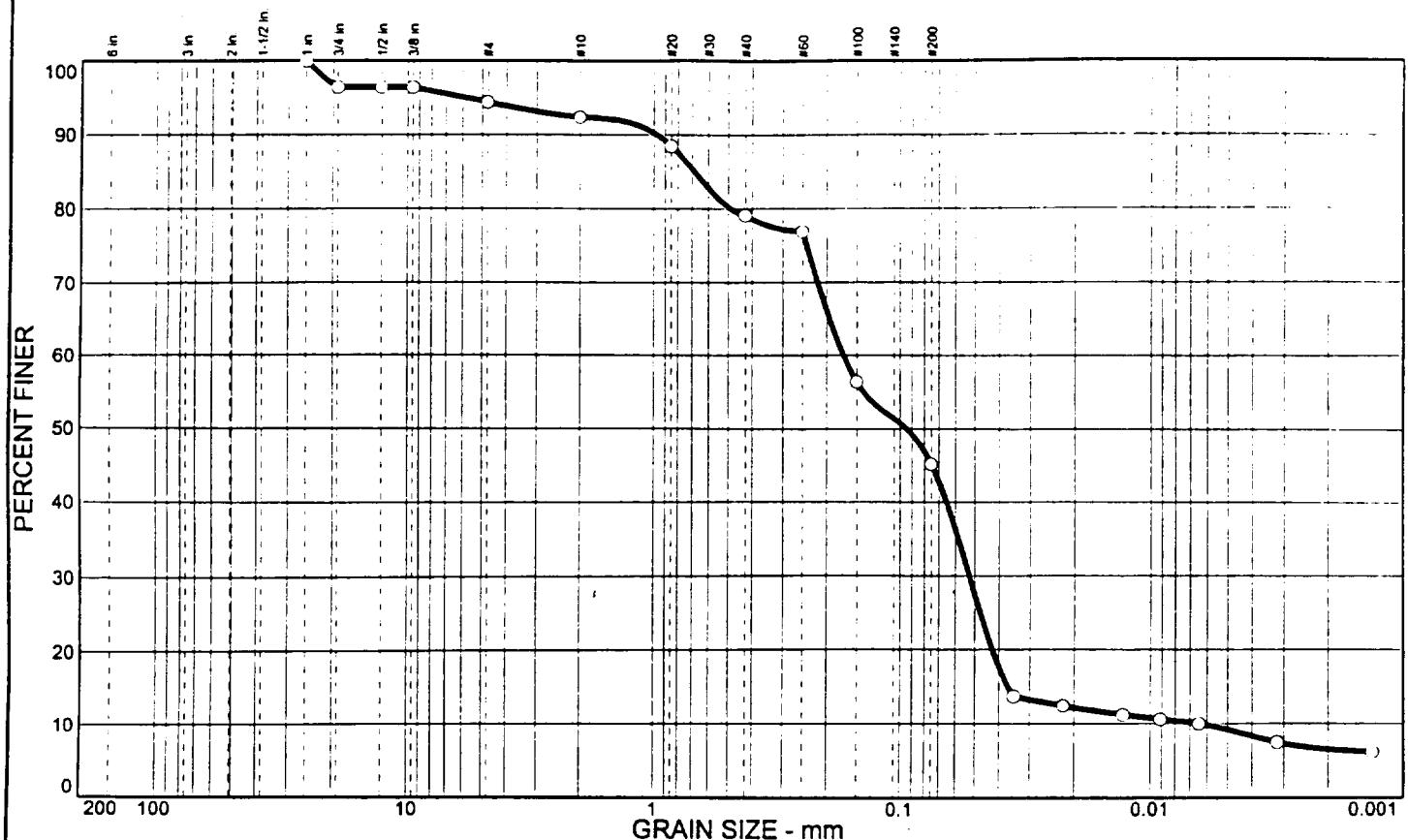
D₃₅ = 0.07 D₆₀ = 0.04 D₅₀ = 0.03

D₃₀ = 0.00



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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	5.6	49.2	36.0	9.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
1	100.0		
.75	96.4		
.5	96.4		
.375	96.4		
X	GRAIN SIZE		
D ₆₀	0.170		
D ₃₀	0.0527		
D ₁₀	0.0064		
X	COEFFICIENTS		
C _c	2.54		
C _u	26.39		

SIEVE number size	PERCENT FINER		
	○		
#4	94.4		
#10	92.4		
#20	88.5		
#40	79.1		
#60	76.9		
#100	56.4		
#200	45.2		

SOIL DESCRIPTION:
○ SILTY MEDIUM TO FINE SAND, TRACE RUBBLE

REMARKS:
○

○ Source: COC-7

Sample No.: FASED-CSE-S26E-0-12"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-192

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-7

ample No.: FASED-CSE-S26E-0-12"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILTY MEDIUM TO FINE SAND, TRACE RUBBLE

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 182.56

Tare = 0.00

ry sample weight = 182.56

ample split on number 10 sieve

plit sample data:

Sample and tare = 74.30 Tare = .00 Sample weight = 74.30

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
-------	------------------------	------------------

1 inch	0.00	100.0
.75 inch	6.65	96.4
.5 inch	6.65	96.4
.375 inch	6.65	96.4
# 4	10.19	94.4
# 10	13.97	92.4
# 20	3.13	88.5
# 40	10.70	79.1
# 60	12.45	76.9
# 100	28.92	56.4
# 200	37.94	45.2

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 92.4

ight of hydrometer sample: 74.3

culated biased weight= 80.41

ble of composite correction values:

Temp, deg C: 20.5 21.5

Comp. corr: -8.0 -8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

drometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

267A-193

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.7	19.0	11.0	0.0135	19.0	13.2	0.0347	13.7
5.00	20.8	18.0	10.0	0.0135	18.0	13.3	0.0221	12.4
15.00	20.8	17.0	9.0	0.0135	17.0	13.5	0.0128	11.2
30.00	20.8	16.5	8.5	0.0135	16.5	13.6	0.0091	10.6
60.00	21.0	16.0	8.0	0.0135	16.0	13.7	0.0064	10.0
250.00	21.3	14.0	6.0	0.0134	14.0	14.0	0.0032	7.5
1440.00	21.1	13.0	5.0	0.0135	13.0	14.2	0.0013	6.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 5.6 (% coarse = 3.6 % fine = 2.0)

SAND = 49.2 (% coarse = 2.0 % medium = 13.3 % fine = 33.9)

SILT = 36.0 % CLAY = 9.2

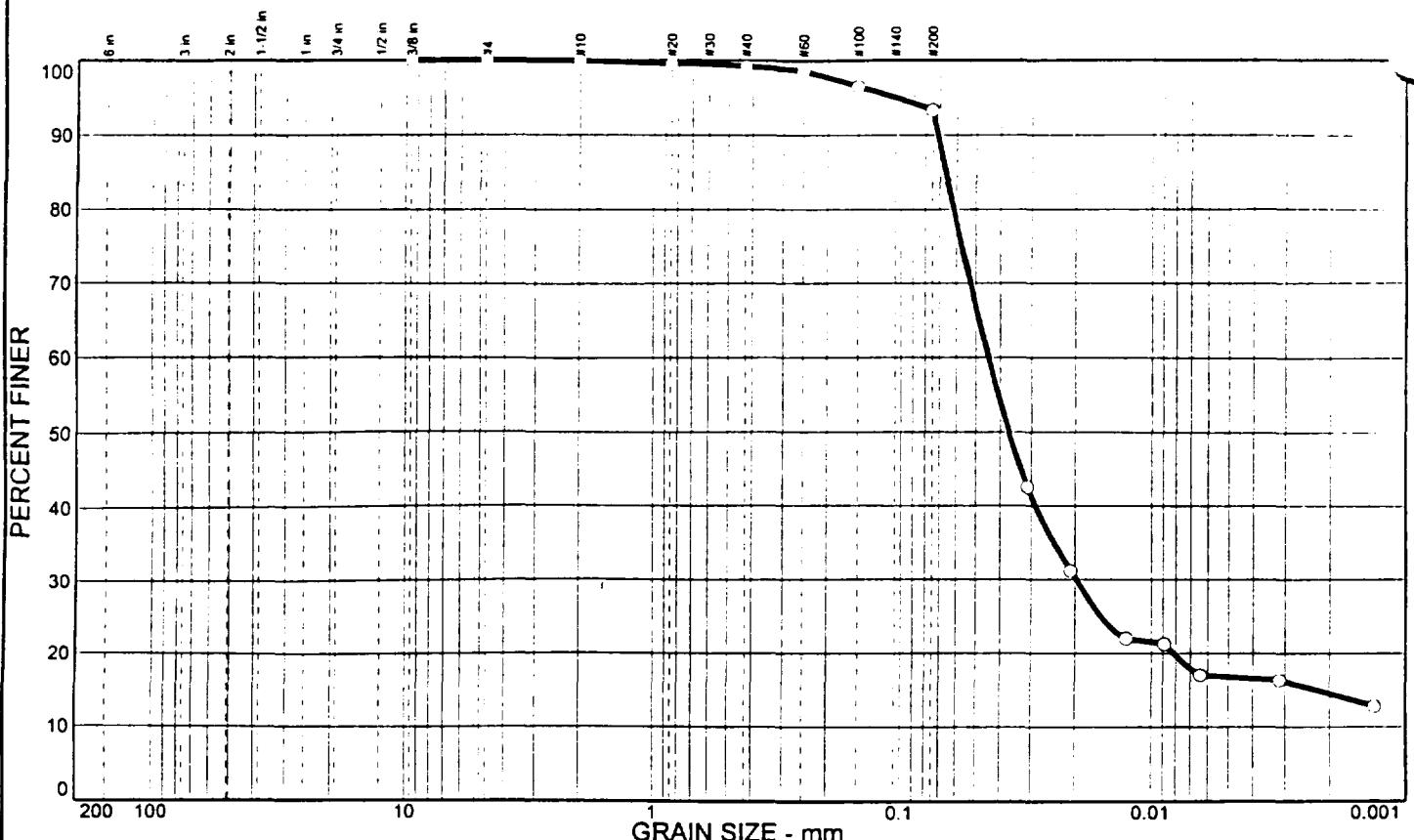
D₅= 0.68 D₆₀= 0.17 D₅₀= 0.09

D₁₀= 0.05 D₁₅= 0.04 D₁₀= 0.01

C_u= 2.5381 C_u= 26.3943

J. J. Dally
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		6.7	76.5	16.8	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	100.0			○ SILT, TRACE SAND
<hr/>								
GRANULARITY								
D ₆₀	0.0446			#10	99.9			
D ₃₀	0.0198			#20	99.5			
D ₁₀				#40	99.2			
<hr/>								
COEFFICIENTS								
C _c				#60	98.6			
C _u				#100	96.5			
				#200	93.3			
<hr/>								
REMARKS:								
○								

○ Source: COC-8

Sample No.: FASED-CSF-S1E-0-8"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-195

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Object Number: 1999-00-0774

Sample Data

Source: COC-8
Sample No.: FASED-CSF-S1E-0-8"
lev. or Depth:
Location:
Description: SILT, TRACE SAND
Liquid Limit: - - -
SCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 133.32
tare = 0.00
dry sample weight = 133.32
sample split on number 10 sieve
split sample data:

Sample and tare = 70.47 Tare = .00 Sample weight = 70.47
cumulative weight retained tare= .00
. for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.08	99.9
# 20	0.31	99.5
# 40	0.53	99.2
# 60	0.92	98.6
# 100	2.37	96.5
# 200	4.65	93.3

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 99.9
Weight of hydrometer sample: 70.47
Calculated biased weight= 70.54
Table of composite correction values:
Temp, deg C: 20.0 18.0
Comp. corr: -8.0 -8.0

Meniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.1	38.0	30.0	0.0138	38.0	10.1	0.0310	42.5
5.00	19.2	30.0	22.0	0.0138	30.0	11.4	0.0208	31.2
15.00	19.2	23.5	15.5	0.0138	23.5	12.4	0.0126	22.0
30.00	19.3	23.0	15.0	0.0138	23.0	12.5	0.0089	21.3
60.00	19.5	20.0	12.0	0.0137	20.0	13.0	0.0064	17.0
250.00	19.6	19.5	11.5	0.0137	19.5	13.1	0.0031	16.3
1440.00	19.6	17.0	9.0	0.0137	17.0	13.5	0.0013	12.8

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 6.7 (% coarse = 0.1 % medium = 0.7 % fine = 5.9)

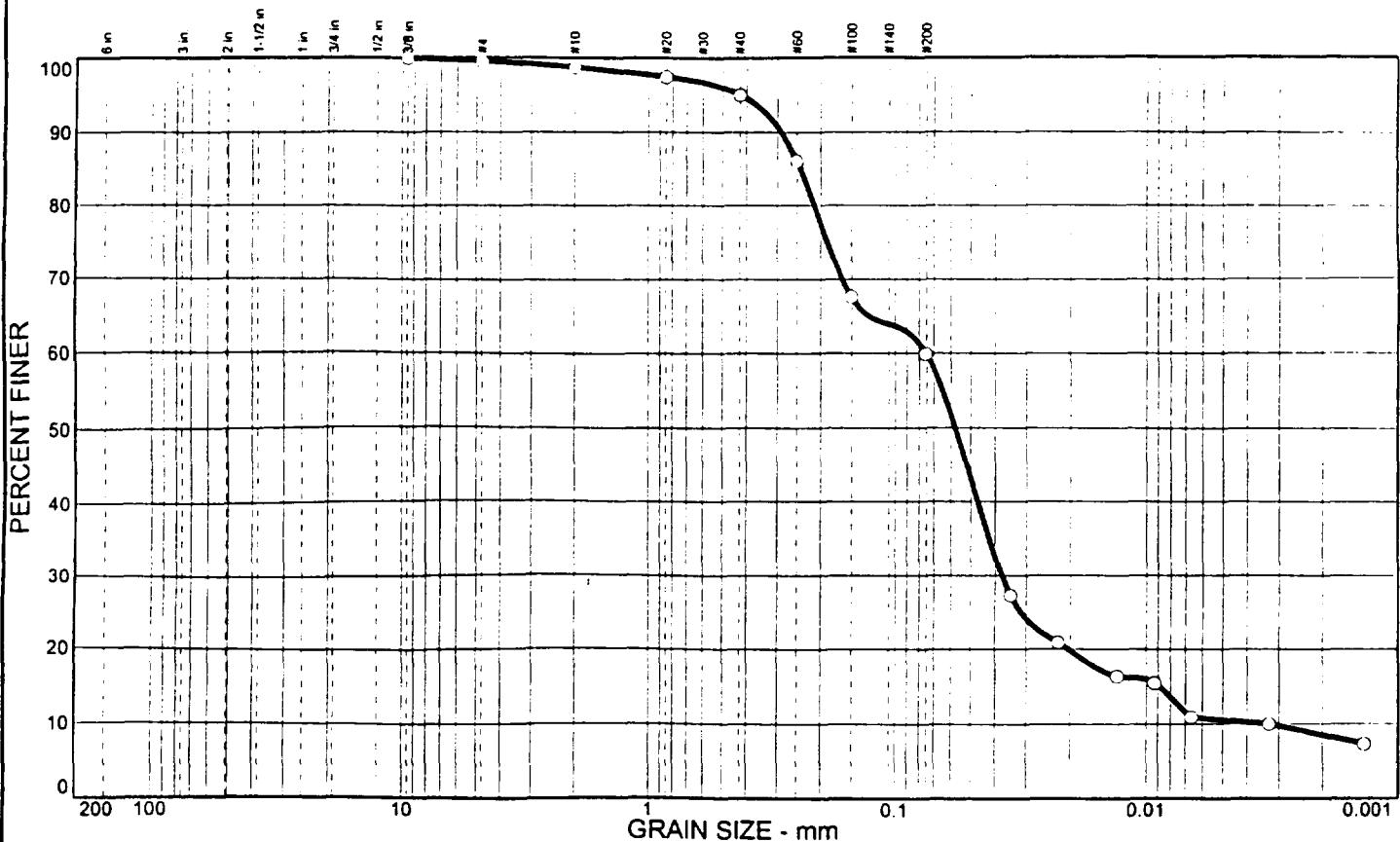
SILT = 76.5 % CLAY = 16.8

85= 0.07 D60= 0.04 D50= 0.04

30= 0.02 D15= 0.00

J. A. L.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.5	39.6	49.4	10.5	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	99.5			○ FINE SANDY SILT
GRANULARITY								
D ₆₀	0.0753			#10	98.7			
D ₃₀	0.0374			#20	97.4			
D ₁₀	0.0033			#40	95.0			
COEFFICIENTS								
C _c	5.71			#60	86.1			
C _u	23.11			#100	67.6			
				#200	59.9			
REMARKS:								
○								

○ Source: COC-8

Sample No.: FASED-CSF-S2-0-7"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-198

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource: COC-8

ample No.: FASED-CSF-S2-0-7"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: FINE SANDY SILT

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 167.70

are = 0.00

ry sample weight = 167.70

ample split on number 10 sieve

plit sample data:

Sample and tare = 54.24 Tare = .00 Sample weight = 54.24

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer

.375 inch	0.00	100.0
Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.83	99.5
# 10	2.12	98.7
# 20	0.74	97.4
# 40	2.05	95.0
# 60	6.92	86.1
# 100	17.12	67.6
# 200	21.34	59.9

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 98.7

ight of hydrometer sample: 54.24

lculated biased weight= 54.95

able of composite correction values:

Temp, deg C: 20.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.1	23.0	15.0	0.0138	23.0	12.5	0.0345	27.3
5.00	19.2	19.5	11.5	0.0138	19.5	13.1	0.0223	20.9
15.00	19.2	17.0	9.0	0.0138	17.0	13.5	0.0131	16.4
30.00	19.2	16.5	8.5	0.0138	16.5	13.6	0.0093	15.5
60.00	19.5	14.0	6.0	0.0137	14.0	14.0	0.0066	10.9
250.00	19.5	13.5	5.5	0.0137	13.5	14.1	0.0033	10.0
1440.00	19.6	12.0	4.0	0.0137	12.0	14.3	0.0014	7.3

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.5 (% coarse = % fine = 0.5)

SAND = 39.6 (% coarse = 0.8 % medium = 3.7 % fine = 35.1)

SILT = 49.4 % CLAY = 10.5

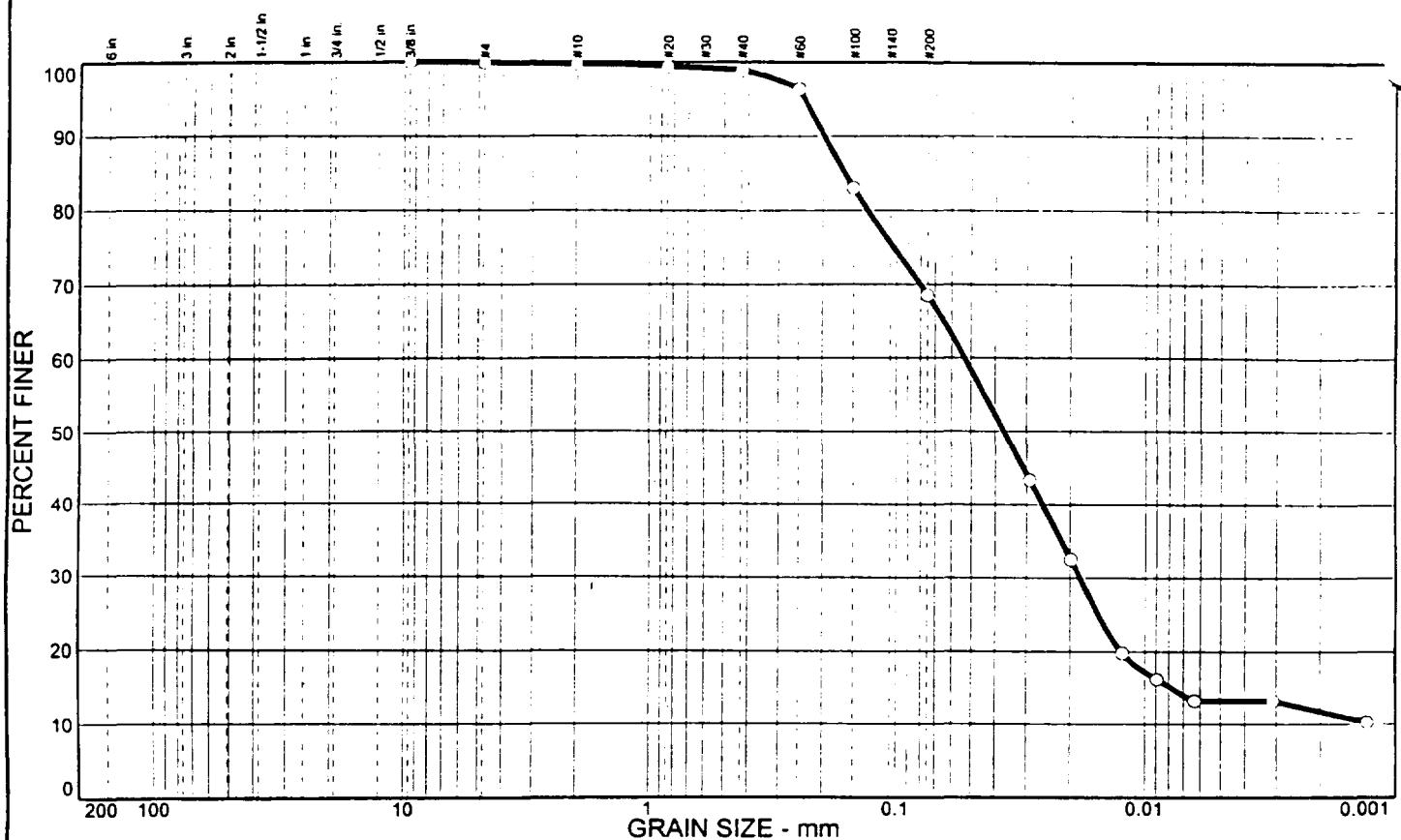
D₃₅ = 0.24 D₆₀ = 0.08 D₅₀ = 0.06

D₁₀ = 0.04 D₁₅ = 0.01 D₁₀ = 0.00

C_u = 5.7131 C_u = 23.1071

J. L. G.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.1	31.4	55.3	13.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
<hr/>			
GRAIN SIZE			
D ₆₀	0.0530		
D ₃₀	0.0182		
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.9		
#10	99.7		
#20	99.4		
#40	98.9		
#60	96.4		
#100	83.0		
#200	68.5		

SOIL DESCRIPTION
 FINE SANDY SILT

REMARKS:

Source: COC-10

Sample No.: FASED-CSF-S3E-0-6"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-201

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

source: COC-10
sample No.: FASED-CSF-S3E-0-6"
lev. or Depth:
ocation:
escription: FINE SANDY SILT
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 172.65
 are = 0.00
 ry sample weight = 172.65
 ample split on number 10 sieve
 oplit sample data:
 Sample and tare = 82.90 Tare = .00 Sample weight = 82.90
 Cumulative weight retained tare= .00
 for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.20	99.9
# 10	0.60	99.7
# 20	0.24	99.4
# 40	0.65	98.9
# 60	2.74	96.4
# 100	13.86	83.0
# 200	25.94	68.5

Hydrometer Analysis Data

paration sieve is #10
ercent -#10 based upon complete sample= 99.7
ight of hydrometer sample: 82.9
lculated biased weight= 83.15
able of composite correction values:
Temp, deg C: 20.0 21.5
Comp. corr: -8.0 -8.0

```
:niscus correction only= 0  
pecific gravity of solids= 2.65  
pecific gravity correction factor= 1.000  
ometer type: 152H  
ffective depth L= 16.294964 - 0.164 x Rm
```

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.1	44.0	36.0	0.0136	44.0	9.1	0.0290	43.3
5.00	20.1	35.0	27.0	0.0136	35.0	10.6	0.0198	32.5
15.00	20.3	24.5	16.5	0.0136	24.5	12.3	0.0123	19.8
30.00	20.0	21.5	13.5	0.0136	21.5	12.8	0.0089	16.2
60.00	21.1	19.0	11.0	0.0135	19.0	13.2	0.0063	13.2
250.00	21.4	19.0	11.0	0.0134	19.0	13.2	0.0031	13.2
1440.00	21.4	16.5	8.5	0.0134	16.5	13.6	0.0013	10.2

Fractional Components

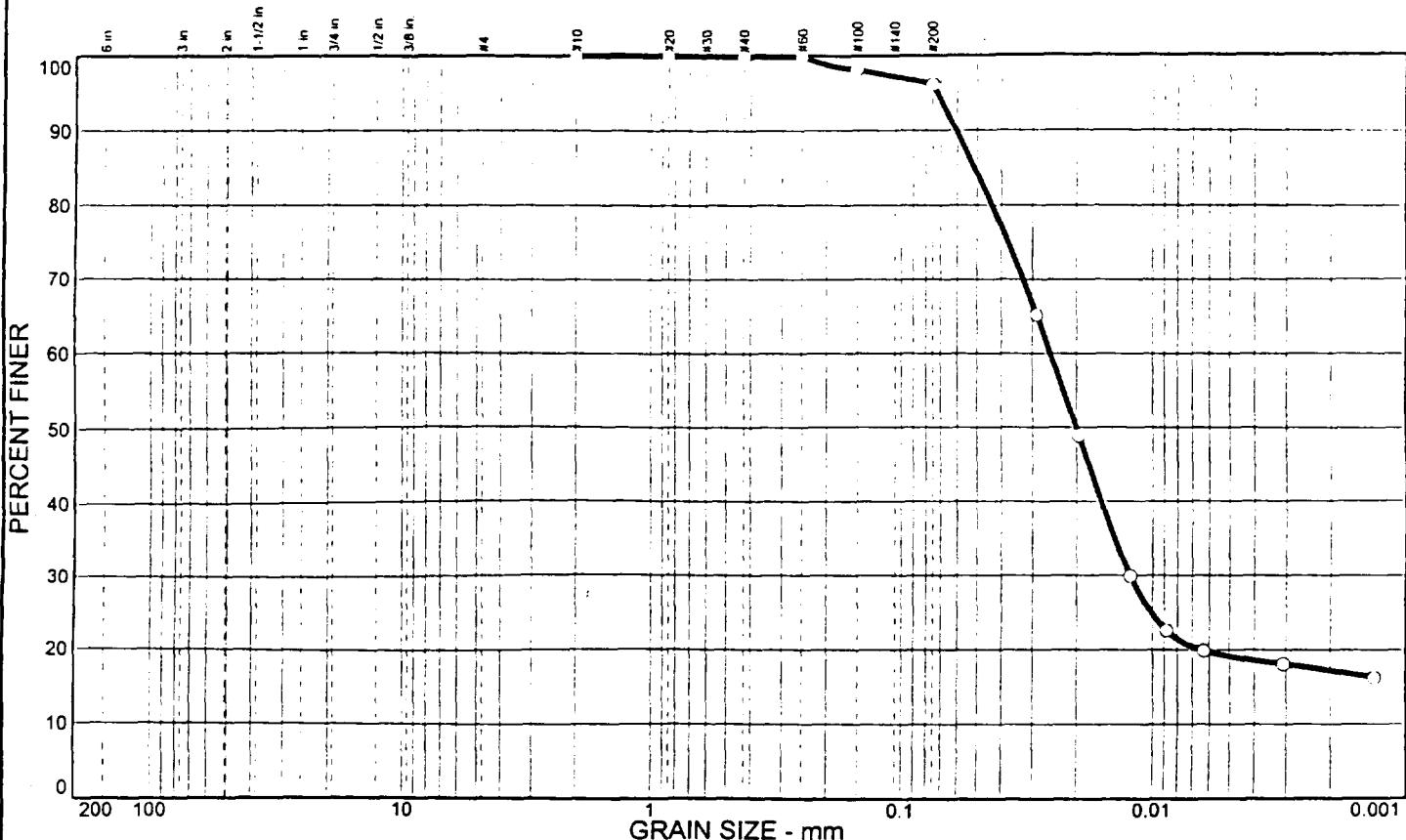
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.1 (% coarse = % fine = 0.1)
 SAND = 31.4 (% coarse = 0.2 % medium = 0.8 % fine = 30.4)
 SILT = 55.3 % CLAY = 13.2

85= 0.16 D₆₀= 0.05 D₅₀= 0.04
 30= 0.02 D₁₅= 0.01

Jay
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		3.8	77.1	19.1	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, TRACE SAND
	○				○			
				#10	100.0			
				#20	100.0			
				#40	99.9			
				#60	99.8			
				#100	98.2			
				#200	96.2			
GRAIN SIZE								
D ₆₀	0.0253							
D ₃₀	0.0122							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-1

Sample No.: FASED-CSF-S4-0-7"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-204

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ject: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-1

ample No.: FASED-CSF-S4-0-7"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 169.78

ire = 0.00

ry sample weight = 169.78

ample split on number 10 sieve

plit sample data:

Sample and tare = 55.24 Tare = .00 Sample weight = 55.24

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.01	100.0
# 40	0.04	99.9
# 60	0.10	99.8
# 100	0.99	98.2
# 200	2.12	96.2

Hydrometer Analysis Data

paration sieve is #10

ercent -#10 based upon complete sample= 100.0

ight of hydrometer sample: 55.24

lculated biased weight= 55.24

ble of composite correction values:

Temp, deg C: 19.5 22.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.9	44.0	36.0	0.0135	44.0	9.1	0.0288	65.2
5.00	20.9	35.0	27.0	0.0135	35.0	10.6	0.0196	48.9
15.00	20.9	24.5	16.5	0.0135	24.5	12.3	0.0122	29.9
30.00	21.3	20.5	12.5	0.0134	20.5	12.9	0.0088	22.6
60.00	21.5	19.0	11.0	0.0134	19.0	13.2	0.0063	19.9
250.00	22.1	18.0	10.0	0.0133	18.0	13.3	0.0031	18.1
1440.00	19.2	17.0	9.0	0.0138	17.0	13.5	0.0013	16.3

Fractional Components

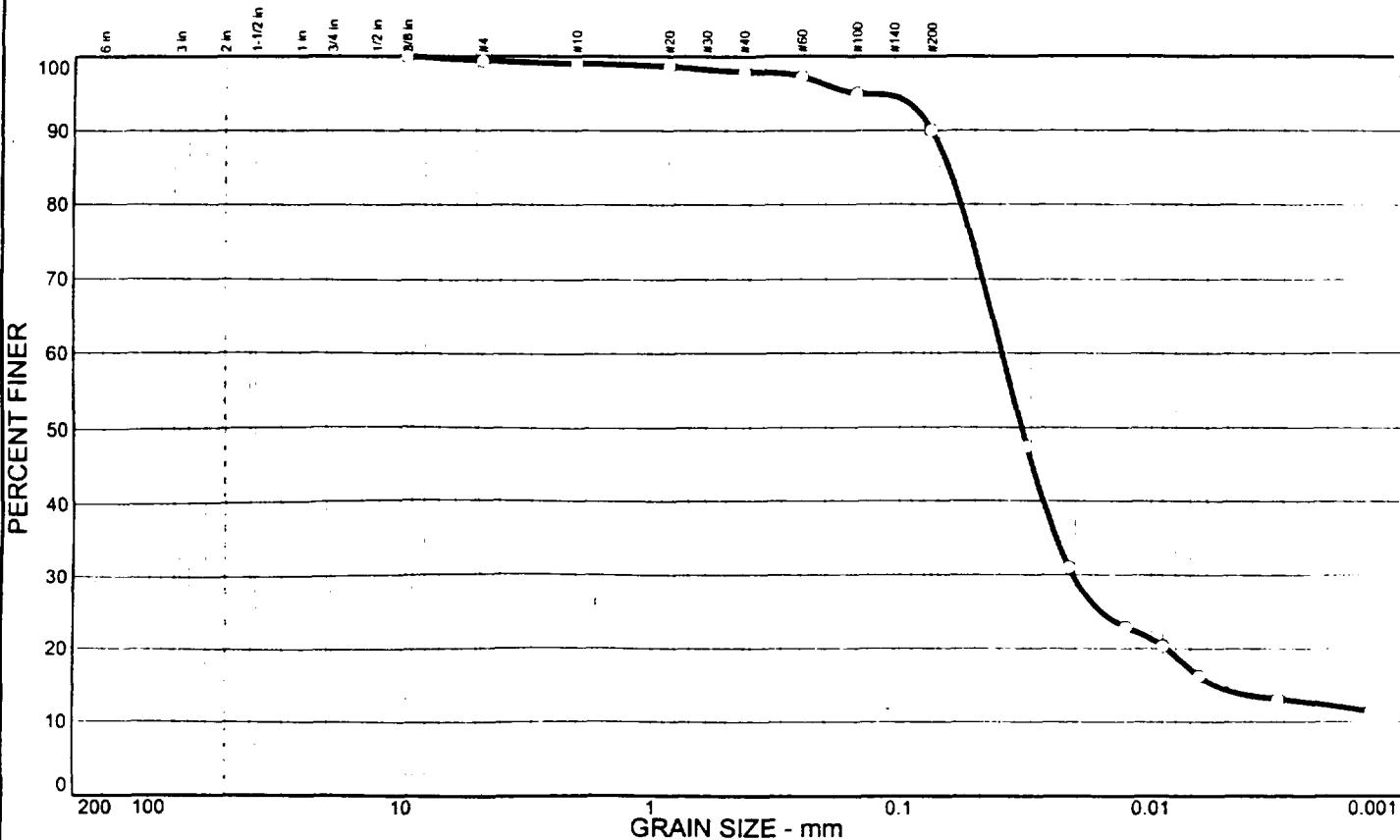
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =
SAND = 3.8 (% coarse = % medium = 0.1 % fine = 3.7)
SILT = 77.1 % CLAY = 19.1

85= 0.05 D₆₀= 0.03 D₅₀= 0.02
30= 0.01

Jad
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	0.6	9.4	75.7	14.3	---	---	---	---

SIEVE inches size	PERCENT FINER		
	(C)		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0391		
D ₃₀	0.0204		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

Source: COC-8

Sample No.: FASED-CSF-S5W-0-10"

SIEVE number size	PERCENT FINER		
	(C)		
#4	99.4		
#10	99.0		
#20	98.6		
#40	97.9		
#60	97.2		
#100	95.0		
#200	90.0		

SOIL DESCRIPTION:
(C) SILT, TRACE SAND

REMARKS:
(C)

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-207

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-8
ample No.: FASED-CSF-S5W-0-10"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 127.08
are = 0.00
ry sample weight = 127.08
ample split on number 10 sieve
plit sample data:

Sample and tare = 60.64 Tare = .00 Sample weight = 60.64

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.82	99.4
# 10	1.33	99.0
# 20	0.24	98.6
# 40	0.70	97.9
# 60	1.09	97.2
# 100	2.47	95.0
# 200	5.53	90.0

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.0
eight of hydrometer sample: 60.64
alculated biased weight= 61.25
able of composite correction values:

Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
rometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.5	37.0	29.0	0.0137	37.0	10.2	0.0310	47.4
5.00	19.5	27.0	19.0	0.0137	27.0	11.9	0.0212	31.0
15.00	19.6	22.0	14.0	0.0137	22.0	12.7	0.0126	22.9
30.00	19.7	20.5	12.5	0.0137	20.5	12.9	0.0090	20.4
60.00	19.9	18.0	10.0	0.0137	18.0	13.3	0.0064	16.3
250.00	20.5	16.0	8.0	0.0136	16.0	13.7	0.0032	13.1
1440.00	19.1	15.0	7.0	0.0138	15.0	13.8	0.0014	11.4

Fractional Components

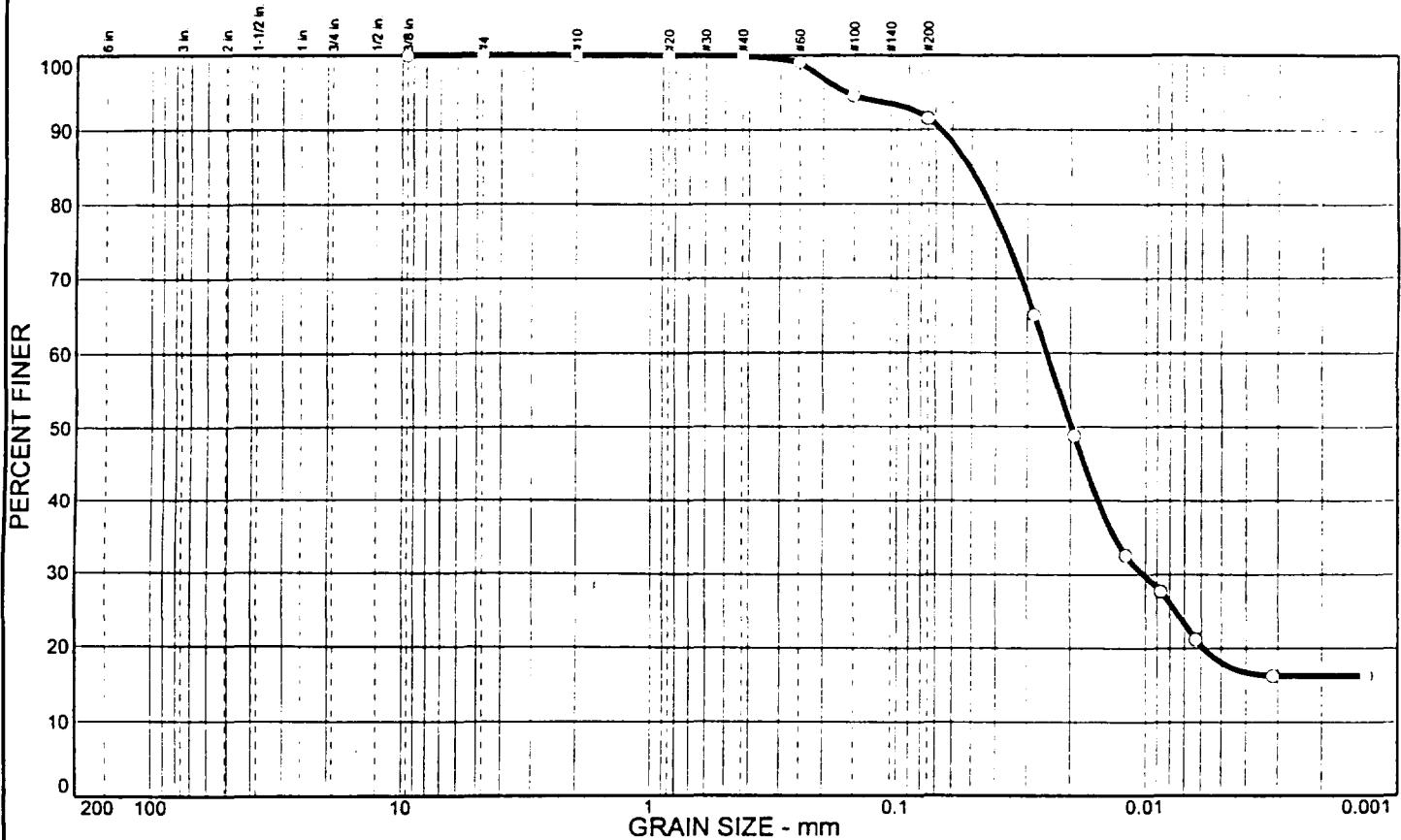
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.6 (% coarse = % fine = 0.6)
SAND = 9.4 (% coarse = 0.4 % medium = 1.1 % fine = 7.9)
SILT = 75.7 % CLAY = 14.3

35= 0.06 D60= 0.04 D50= 0.03
30= 0.02 D15= 0.01

Julie
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		8.5	73.4	18.1	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION	
	○				○				
.375	100.0			#4	100.0			○ SILT, TRACE SAND	
				#10	100.0				
				#20	100.0				
				#40	99.9				
				#60	99.1				
				#100	94.6				
				#200	91.5				
GRAIN SIZE									
D ₆₀	0.0249								
D ₃₀	0.0102								
D ₁₀									
COEFFICIENTS									
C _c									
C _u									

○ Source: COC-5

Sample No.: FASED-CSF-S6E-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-210

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource: COC-5

ample No.: FASED-CSF-S6E-0-10"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 121.51

are = 0.00

ry sample weight = 121.51

ample split on number 10 sieve

plit sample data:

Sample and tare = 61.43 Tare = .00 Sample weight = 61.43

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.06	100.0
# 20	0.02	100.0
# 40	0.08	99.9
# 60	0.57	99.1
# 100	3.34	94.6
# 200	5.20	91.5

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 100.0

eight of hydrometer sample: 61.43

calculated biased weight= 61.43

able of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.1	48.0	40.0	0.0136	48.0	8.4	0.0280	65.1
5.00	20.1	38.0	30.0	0.0136	38.0	10.1	0.0193	48.8
15.00	20.2	28.0	20.0	0.0136	28.0	11.7	0.0120	32.6
30.00	20.2	25.0	17.0	0.0136	25.0	12.2	0.0087	27.7
60.00	20.2	21.0	13.0	0.0136	21.0	12.9	0.0063	21.2
250.00	20.9	18.0	10.0	0.0135	18.0	13.3	0.0031	16.3
1440.00	19.1	18.0	10.0	0.0138	18.0	13.3	0.0013	16.3

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 8.5 (% coarse = 0.0 % medium = 0.1 % fine = 8.4)

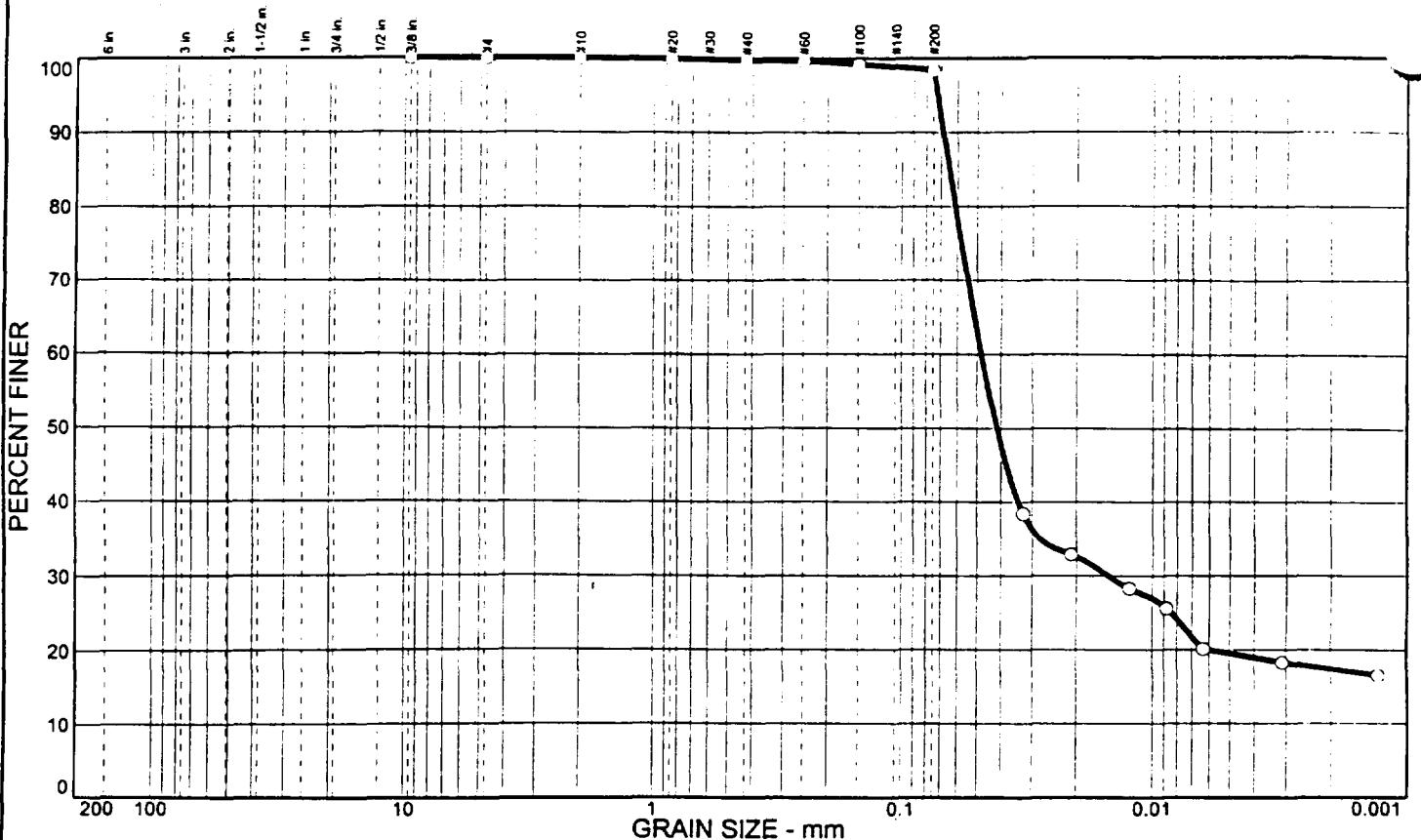
SILT = 73.4 % CLAY = 18.1

35= 0.05 D60= 0.02 D50= 0.02

30= 0.01

J. M. J.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
O		1.6	78.9	19.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.375	100.0		
GRANULARITY			
D ₆₀	0.0480		
D ₃₀	0.0150		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	O		
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.7		
#60	99.6		
#100	99.2		
#200	98.4		

SOIL DESCRIPTION
O SILT, TRACE SAND

REMARKS:
O

Source: COC-6

Sample No.: FASED-CSF-S7E-0-11"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-213

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-6
Sample No.: FASED-CSF-S7E-0-11"
Elev. or Depth:
Location:
Description: SILT, TRACE SAND
Liquid Limit: - - -
SCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 153.79
tare = 0.00
dry sample weight = 153.79
sample split on number 10 sieve
split sample data:

Sample and tare = 54.71 Tare = .00 Sample weight = 54.71

Cumulative weight retained tare= .00

: for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.09	99.8
# 40	0.15	99.7
# 60	0.23	99.6
# 100	0.44	99.2
# 200	0.87	98.4

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 100.0
Weight of hydrometer sample: 54.71
Calculated biased weight= 54.71
Table of composite correction values:
Temp, deg C: 22.0 18.0
Comp. corr: -8.0 -8.0

Meniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.8	29.0	21.0	0.0135	29.0	11.5	0.0325	38.4
5.00	20.8	26.0	18.0	0.0135	26.0	12.0	0.0210	32.9
15.00	20.8	23.5	15.5	0.0135	23.5	12.4	0.0123	28.3
30.00	20.9	22.0	14.0	0.0135	22.0	12.7	0.0088	25.6
60.00	21.1	19.0	11.0	0.0135	19.0	13.2	0.0063	20.1
250.00	21.5	18.0	10.0	0.0134	18.0	13.3	0.0031	18.3
1440.00	21.1	17.0	9.0	0.0135	17.0	13.5	0.0013	16.5

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 1.6 (% coarse = 0.0 % medium = 0.3 % fine = 1.3)

SILT = 78.9 % CLAY = 19.5

85= 0.06 D60= 0.05 D50= 0.04

30= 0.01

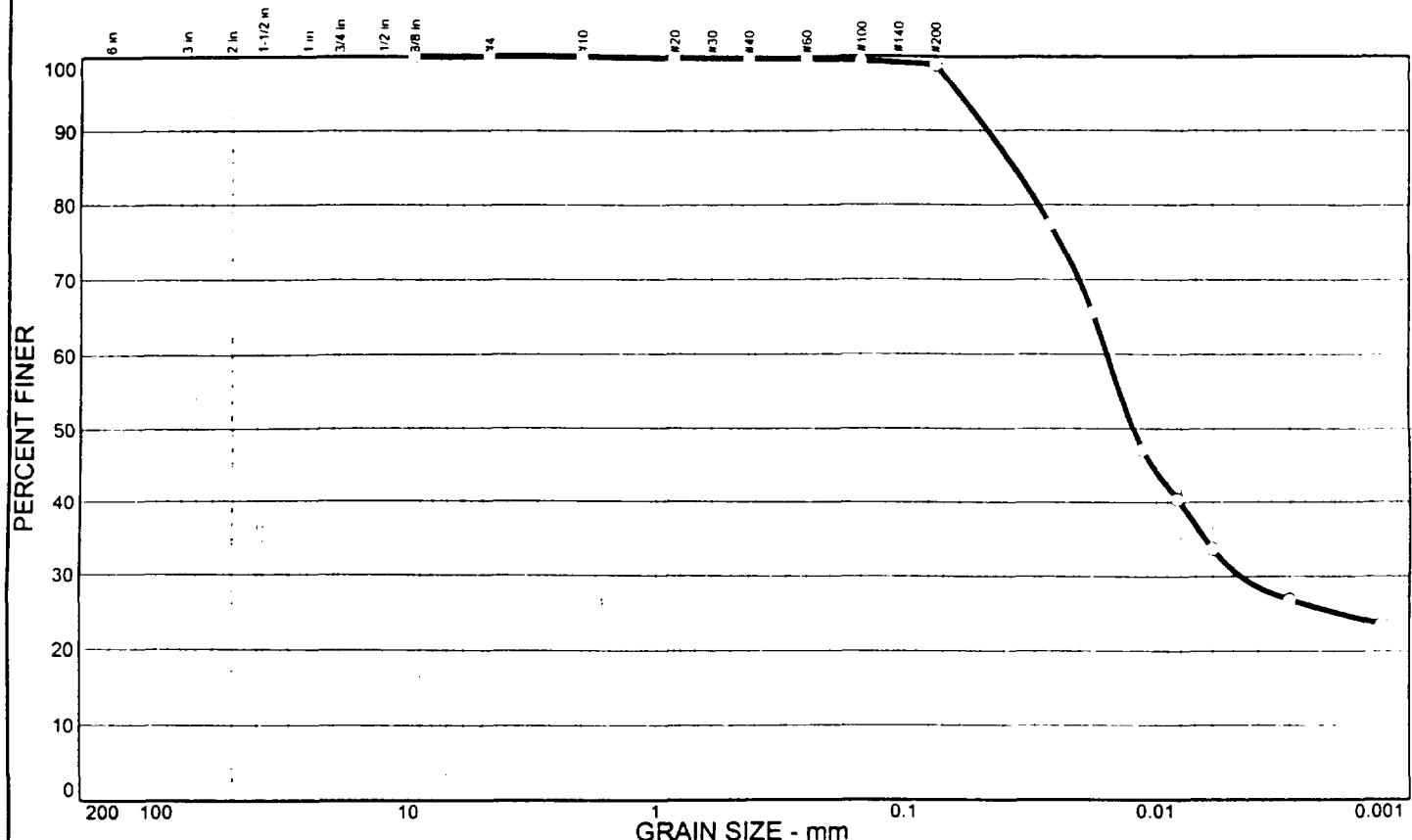


MATERIALS ENGINEERING LABORATORY

267A-215

Thompson Engineering

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		1.1	68.1	30.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	#4	#10	#20
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0156		
D ₃₀	0.0047		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

Source: COC-5

SIEVE number size	PERCENT FINER		
	#4	#10	#20
#4	100.0		
#10	100.0		
#20	99.8		
#40	99.8		
#60	99.7		
#100	99.4		
#200	98.9		

SOIL DESCRIPTION
SILT, TRACE SAND
REMARKS:

Sample No.: FASED-CSF-S8-0-15"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-216

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-5
ample No.: FASED-CSF-S8-0-15"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
GCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 138.12
re = 0.00
ry sample weight = 138.12
mple split on number 10 sieve
plit sample data:

Sample and tare = 59.43 Tare = .00 Sample weight = 59.43

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.12	99.8
# 40	0.14	99.8
# 60	0.21	99.7
# 100	0.35	99.4
# 200	0.67	98.9

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 59.43
lculated biased weight= 59.43
ble of composite correction values:
Temp, deg C: 21.0 18.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
ific gravity correction factor= 1.000
ometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	54.0	46.0	0.0136	54.0	7.4	0.0263	77.4
5.00	20.2	47.0	39.0	0.0136	47.0	8.6	0.0178	65.6
15.00	20.2	36.0	28.0	0.0136	36.0	10.4	0.0113	47.1
30.00	20.2	32.0	24.0	0.0136	32.0	11.0	0.0083	40.4
60.00	20.2	28.0	20.0	0.0136	28.0	11.7	0.0060	33.7
250.00	20.9	24.0	16.0	0.0135	24.0	12.4	0.0030	26.9
1440.00	19.1	22.0	14.0	0.0138	22.0	12.7	0.0013	23.6

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 1.1 (% coarse = 0.0 % medium = 0.2 % fine = 0.9)

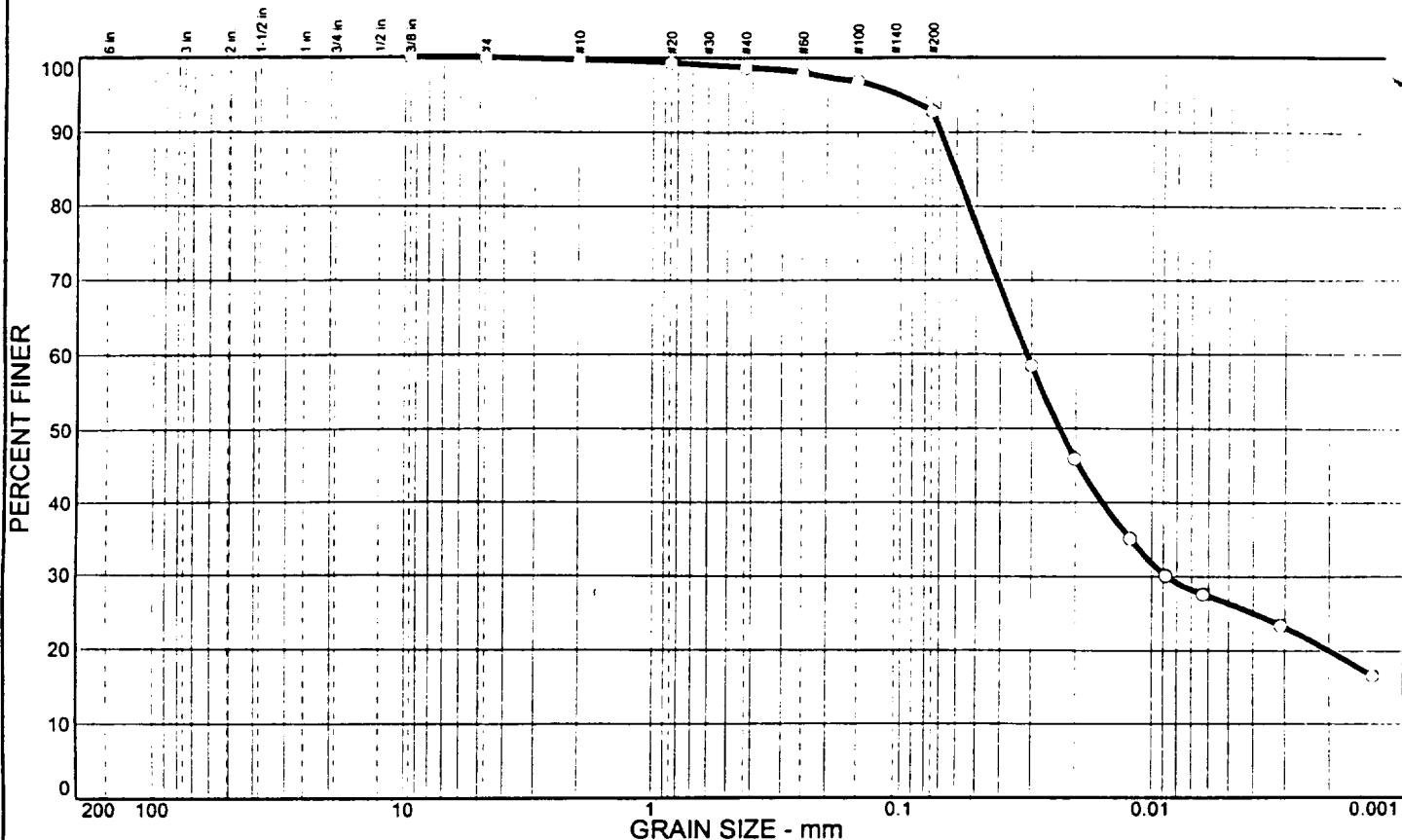
SILT = 68.1 % CLAY = 30.8

D5= 0.04 D60= 0.02 D50= 0.01

D0= 0.00

Daly
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		7.2	66.5	26.3	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0312		
D ₃₀	0.0087		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.7		
#20	99.3		
#40	98.7		
#60	98.0		
#100	96.9		
#200	92.8		

SOIL DESCRIPTION
 SILT, TRACE SAND

REMARKS:

○ Source: COC-5

Sample No.: FASED-CSF-S9-0-11"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-219

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ject: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-5

ample No.: FASED-CSF-S9-0-11"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 174.59

are = 0.00

ry sample weight = 174.59

ample split on number 10 sieve

plit sample data:

Sample and tare = 59.68 Tare = .00 Sample weight = 59.68

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.55	99.7
# 20	0.24	99.3
# 40	0.58	98.7
# 60	1.04	98.0
# 100	1.66	96.9
# 200	4.16	92.8

Hydrometer Analysis Data

eparation sieve is #10

percent -#10 based upon complete sample= 99.7

ight of hydrometer sample: 59.68

calculated biased weight= 59.86

able of composite correction values:

Temp, deg C: 19.0 18.0

Comp. corr: -8.0 -8.0

aniscus correction only= 0

pecific gravity of solids= 2.65

specific gravity correction factor= 1.000

rometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.5	43.0	35.0	0.0139	43.0	9.2	0.0299	58.5
5.00	18.5	35.5	27.5	0.0139	35.5	10.5	0.0201	45.9
15.00	18.5	29.0	21.0	0.0139	29.0	11.5	0.0122	35.1
30.00	18.4	26.0	18.0	0.0139	26.0	12.0	0.0088	30.1
60.00	18.4	24.5	16.5	0.0139	24.5	12.3	0.0063	27.6
250.00	19.0	22.0	14.0	0.0138	22.0	12.7	0.0031	23.4
1440.00	18.7	18.0	10.0	0.0139	18.0	13.3	0.0013	16.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 7.2 (% coarse = 0.3 % medium = 1.0 % fine = 5.9)

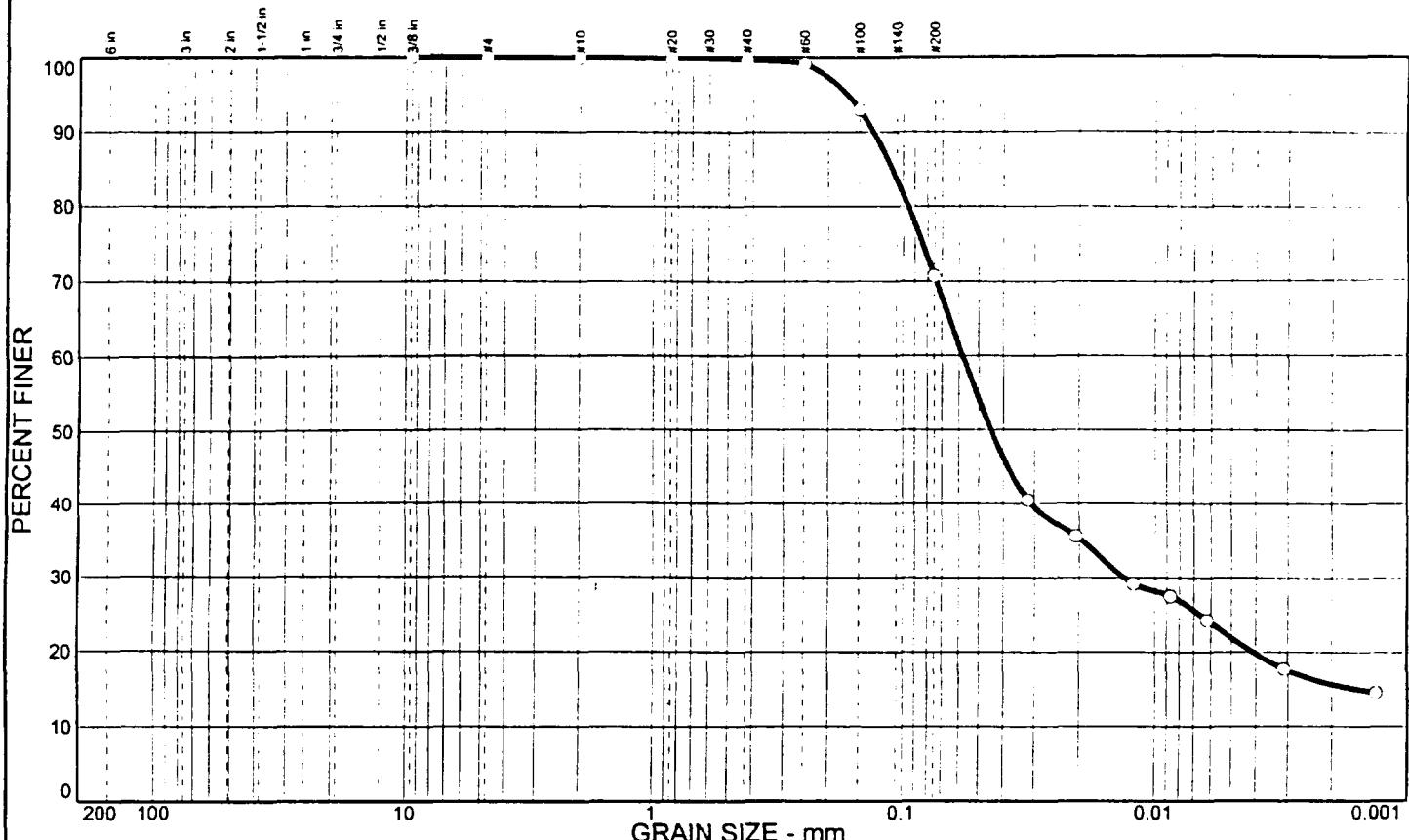
SILT = 66.5 % CLAY = 26.3

D₃₅ = 0.06 D₆₀ = 0.03 D₅₀ = 0.02

D₁₀ = 0.01

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.1	29.2	48.7	22.0	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, WITH SAND
	○				○			
.375	100.0			#4	99.9			
GRAIN SIZE								
D ₆₀	0.0579			#10	99.9			
D ₃₀	0.0133			#20	99.8			
D ₁₀				#40	99.6			
COEFFICIENTS								
C _c				#60	99.2			
C _u				#100	93.0			
				#200	70.7			
REMARKS:								
○								

○ Source: COC-5

Sample No.: FASED-CSF-S10-0-9"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-222

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Object Number: 1999-00-0774

Sample Data

Source: COC-5

Sample No.: FASED-CSF-S10-0-9"

Elev. or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

JSCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Dry sample and tare= 112.12

Tare = 0.00

Dry sample weight = 112.12

Sample split on number 10 sieve

Split sample data:

Sample and tare = 61.66 Tare = .00 Sample weight = 61.66

Cumulative weight retained tare= .00

% for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.08	99.9
# 10	0.13	99.9
# 20	0.09	99.8
# 40	0.20	99.6
# 60	0.43	99.2
# 100	4.24	93.0
# 200	18.03	70.7

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.9

Weight of hydrometer sample: 61.66

Calculated biased weight= 61.72

Table of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

Eniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	33.0	25.0	0.0136	33.0	10.9	0.0318	40.5
5.00	20.2	30.0	22.0	0.0136	30.0	11.4	0.0205	35.6
15.00	20.1	26.0	18.0	0.0136	26.0	12.0	0.0122	29.2
30.00	20.2	25.0	17.0	0.0136	25.0	12.2	0.0087	27.5
60.00	20.2	23.0	15.0	0.0136	23.0	12.5	0.0062	24.3
250.00	20.9	19.0	11.0	0.0135	19.0	13.2	0.0031	17.8
1440.00	19.1	17.0	9.0	0.0138	17.0	13.5	0.0013	14.6

Fractional Components

Gravel/Sand based on #4
Sand/Fines based on #200

COBBLES = % GRAVEL = 0.1 (% coarse = % fine = 0.1)

SAND = 29.2 (% coarse = 0.0 % medium = 0.3 % fine = 28.9)

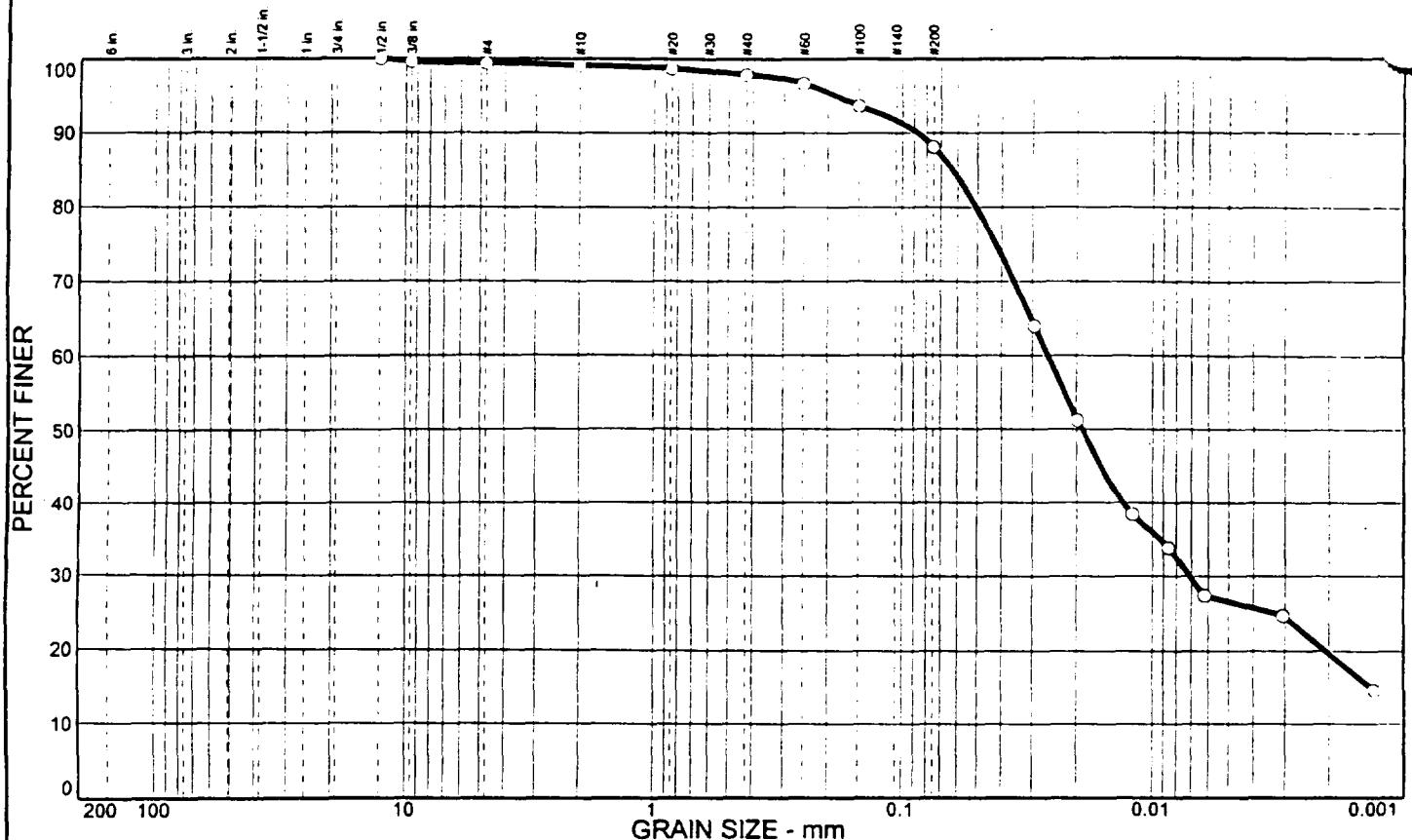
SILT = 48.7 % CLAY = 22.0

$D_5 = 0.11$ $D_{60} = 0.06$ $D_{50} = 0.04$

$D_0 = 0.01$ $D_{15} = 0.00$

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.6	11.3	61.5	26.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
	99.6		

GRAIN SIZE			
D ₆₀	D ₃₀	D ₁₀	
0.0260	0.0071		

COEFFICIENTS			
C _c			

○ Source: COC-10

SIEVE number size	PERCENT FINER		
	○		
#4	99.4		
#10	99.1		
#20	98.7		
#40	97.9		
#60	96.7		
#100	93.7		
#200	88.1		

SOIL DESCRIPTION
○ SILT, LITTLE SAND

REMARKS:
○

Sample No.: FASED-CSF-S11W-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-225

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-10
Sample No.: FASED-CSF-S11W-0-10"
lev. or Depth:
Location:
Description: SILT, LITTLE SAND
Liquid Limit: - - -
SCS Classification: - - -
Testing Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

dry sample and tare= 134.16
tare = 0.00
dry sample weight = 134.16
sample split on number 10 sieve
split sample data:

Sample and tare = 54.20 Tare = .00 Sample weight = 54.20

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent finer
	retained	
.5 inch	0.00	100.0
.375 inch	0.55	99.6
# 4	0.83	99.4
# 10	1.16	99.1
# 20	0.24	98.7
# 40	0.66	97.9
# 60	1.32	96.7
# 100	2.98	93.7
# 200	6.04	88.1

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 99.1
Weight of hydrometer sample: 54.20
Calculated biased weight= 54.69
Table of composite correction values:
Temp, deg C: 22.0 18.0
Comp. corr: -8.0 -8.0

Meniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.8	43.0	35.0	0.0137	43.0	9.2	0.0294	64.0
5.00	19.8	36.0	28.0	0.0137	36.0	10.4	0.0197	51.2
15.00	19.9	29.0	21.0	0.0137	29.0	11.5	0.0120	38.4
30.00	20.3	26.5	18.5	0.0136	26.5	11.9	0.0086	33.8
60.00	20.7	23.0	15.0	0.0135	23.0	12.5	0.0062	27.4
250.00	21.2	21.5	13.5	0.0134	21.5	12.8	0.0030	24.7
1440.00	20.9	16.0	8.0	0.0135	16.0	13.7	0.0013	14.6

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.6 (% coarse = % fine = 0.6)
 SAND = 11.3 (% coarse = 0.3 % medium = 1.2 % fine = 9.8)
 SILT = 61.5 % CLAY = 26.6

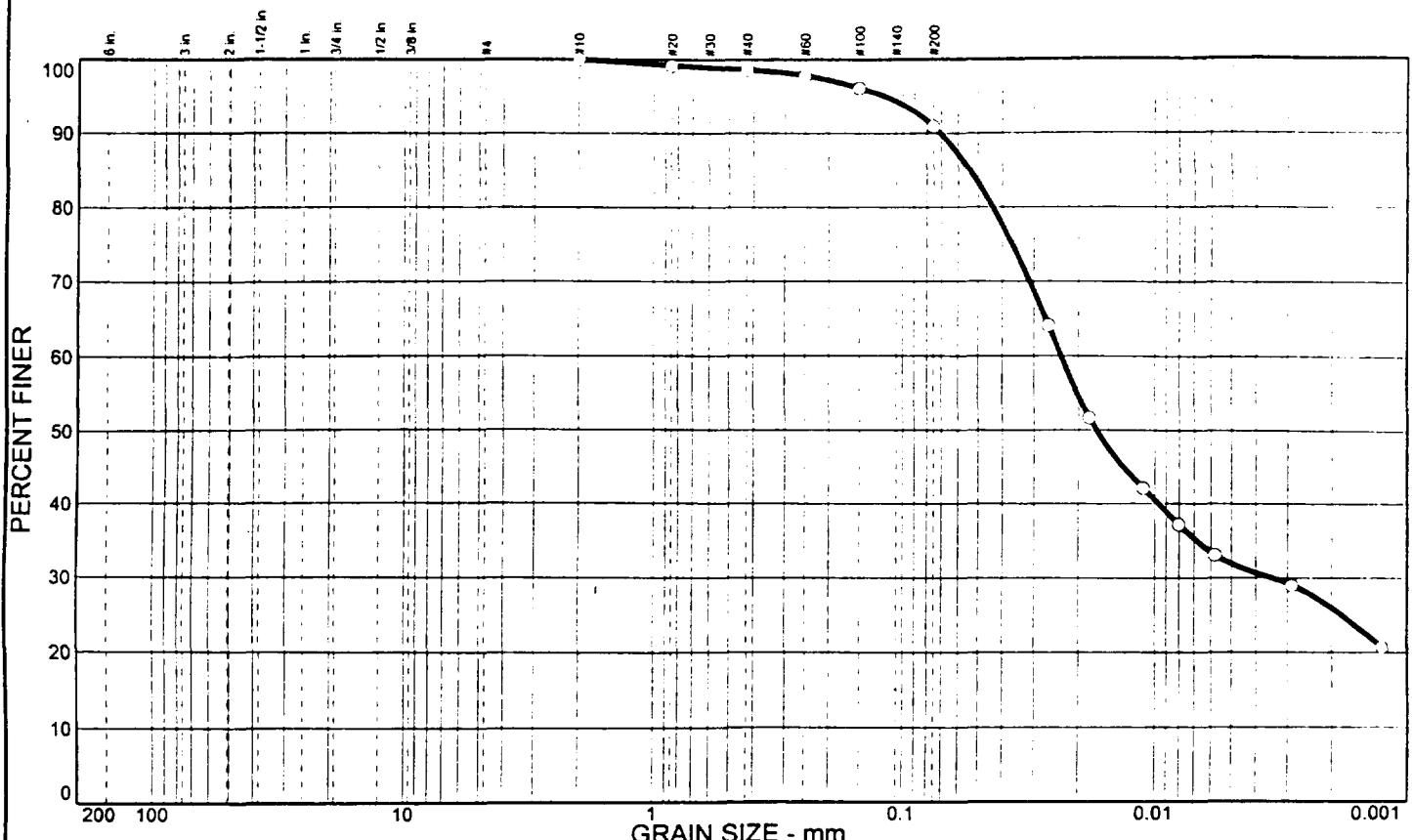
85= 0.06 D60= 0.03 D50= 0.02
 30= 0.01 D15= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

267A-227

Thompson Engineering

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		9.1	59.0	31.9	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
				#10	100.0			○ SILT, TRACE SAND
				#20	99.2			
				#40	98.6			
				#60	97.8			
				#100	96.1			
				#200	90.9			
GRAIN SIZE								
D ₆₀	0.0233							
D ₃₀	0.0035							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-10

Sample No.: FASED-CSF-S12-0-15"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-228

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
roject Number: 1999-00-0774

Sample Data

ource: COC-10
ample No.: FASED-CSF-S12-0-15"
lev. or Depth: Sample Length (in./cm.):
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - - Plastic Limit: - - -
SCS Classification: - - - AASHTO Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 110.06
are = 0.00
ry sample weight = 110.06
ample split on number 10 sieve
plit sample data:

Sample and tare = 72.54 Tare = .00 Sample weight = 72.54

Cumulative weight retained tare= .00

, for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.60	99.2
# 40	1.04	98.6
# 60	1.62	97.8
# 100	2.80	96.1
# 200	6.62	90.9

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
eight of hydrometer sample: 72.54
alculated biased weight= 72.54
able of composite correction values:
Temp, deg C: 20.0 22.0
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.0	54.5	46.5	0.0136	54.5	7.4	0.0262	64.1
5.00	20.0	45.5	37.5	0.0136	45.5	8.8	0.0181	51.7
15.00	20.2	38.5	30.5	0.0136	38.5	10.0	0.0111	42.1
30.00	20.6	35.0	27.0	0.0135	35.0	10.6	0.0080	37.2
60.00	21.1	32.0	24.0	0.0135	32.0	11.0	0.0058	33.1
250.00	21.6	29.0	21.0	0.0134	29.0	11.5	0.0029	29.0
1440.00	21.2	23.0	15.0	0.0134	23.0	12.5	0.0013	20.7

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 9.1 (% coarse = % medium = 1.4 % fine = 7.7)

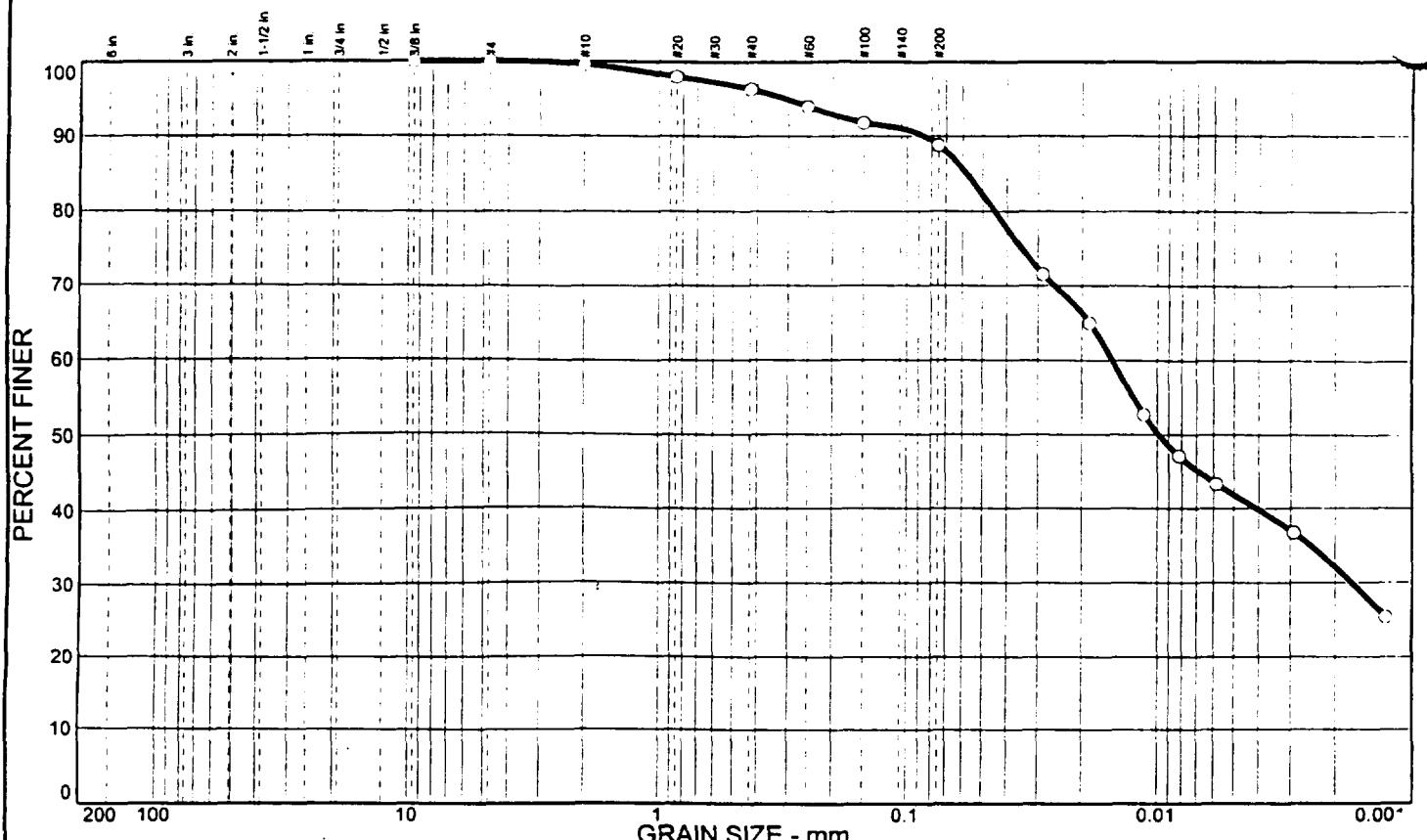
SILT = 59.0 (% CLAY = 31.9)

D₅= 0.05 D₆₀= 0.02 D₅₀= 0.02

D₀= 0.00

John
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		11.2	47.0	41.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0151		
D ₃₀	0.0017		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-10

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.6		
#20	98.0		
#40	96.3		
#60	94.0		
#100	91.8		
#200	88.8		

SOIL DESCRIPTION
○ SILT, LITTLE SAND

REMARKS:
○

Sample No.: FASED-CSF-S13W-0-15"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-231

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-10

Sample No.: FASED-CSF-S13W-0-15"

lev. or Depth:

Location:

Description: SILT, LITTLE SAND

Liquid Limit: - - -

SCS Classification: - - -

Testing Remarks:

Sample Length (in./cm.):

Plastic Limit: - - -

AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Gross sample and tare = 140.22

Tare = 0.00

Gross sample weight = 140.22

Sample split on number 10 sieve

Split sample data:

Sample and tare = 52.91 Tare = .00 Sample weight = 52.91

Cumulative weight retained tare = .00

% for cumulative weight retained = .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.50	99.6
# 20	0.83	98.0
# 40	1.77	96.3
# 60	2.98	94.0
# 100	4.14	91.8
# 200	5.76	88.8

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.6

Weight of hydrometer sample: 52.91

Calculated biased weight= 53.12

Table of composite correction values:

Temp, deg C: 22.0 18.0

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.0	46.0	38.0	0.0136	46.0	8.8	0.0285	71.5
5.00	20.1	42.5	34.5	0.0136	42.5	9.3	0.0186	65.0
15.00	20.3	36.0	28.0	0.0136	36.0	10.4	0.0113	52.7
30.00	20.6	33.0	25.0	0.0135	33.0	10.9	0.0082	47.1
60.00	20.8	31.0	23.0	0.0135	31.0	11.2	0.0058	43.3
250.00	21.6	27.5	19.5	0.0134	27.5	11.8	0.0029	36.7
1440.00	21.3	21.5	13.5	0.0134	21.5	12.8	0.0013	25.4

Fractional Components

ravel/Sand based on #4

and/Fines based on #200

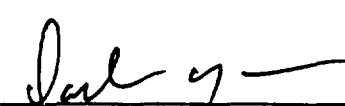
COBBLES = % GRAVEL =

SAND = 11.2 (% coarse = 0.4 % medium = 3.3 % fine = 7.5)

SILT = 47.0 % CLAY = 41.8

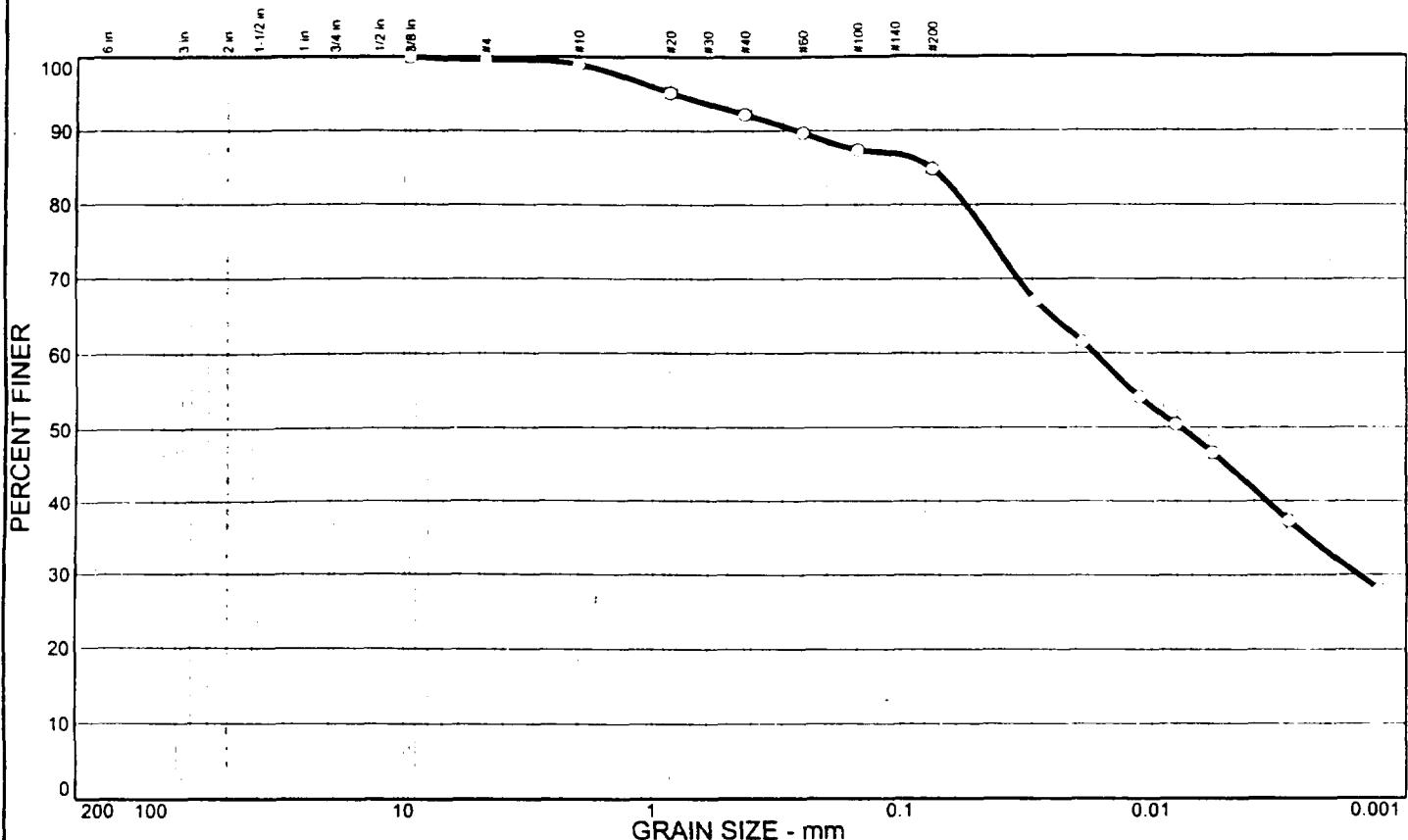
35= 0.06 D₆₀= 0.02 D₅₀= 0.01

30= 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
	0.4	14.8	40.1	44.7	---	---	---	---

SIEVE inches size	PERCENT FINER		
	#4	#10	#20
.375	100.0		
<hr/>			
<hr/>			
GRAIN SIZE			
D ₆₀	0.0169		
D ₃₀	0.0016		
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	#4	#10	#20
#4	99.6		
#10	98.9		
#20	95.1		
#40	92.2		
#60	89.7		
#100	87.4		
#200	84.8		

SOIL DESCRIPTION
C CLAY, WITH SAND
REMARKS:
(D)

Source: COC-5

Sample No.: FASED-CSF-S14W-0-15"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-234

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ject: SOUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-5

ample No.: FASED-CSF-S14W-0-15"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: CLAY, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

CS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 92.92

re = 0.00

ry sample weight = 92.92

ample split on number 10 sieve

plit sample data:

Sample and tare = 53.03 Tare = .00 Sample weight = 53.03

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.37	99.6
# 10	1.03	98.9
# 20	2.05	95.1
# 40	3.60	92.2
# 60	4.96	89.7
# 100	6.17	87.4
# 200	7.54	84.8

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 98.9

ight of hydrometer sample: 53.03

lculated biased weight= 53.62

ble of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

niscus correction only= 0

ecific gravity of solids= 2.65

ecific gravity correction factor= 1.000

rometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	44.0	36.0	0.0136	44.0	9.1	0.0290	67.1
5.00	20.2	41.0	33.0	0.0136	41.0	9.6	0.0188	61.5
15.00	20.2	37.0	29.0	0.0136	37.0	10.2	0.0112	54.1
30.00	20.2	35.0	27.0	0.0136	35.0	10.6	0.0081	50.4
60.00	20.2	33.0	25.0	0.0136	33.0	10.9	0.0058	46.6
250.00	20.9	28.0	20.0	0.0135	28.0	11.7	0.0029	37.3
1440.00	19.1	23.0	15.0	0.0138	23.0	12.5	0.0013	28.0

Fractional Components

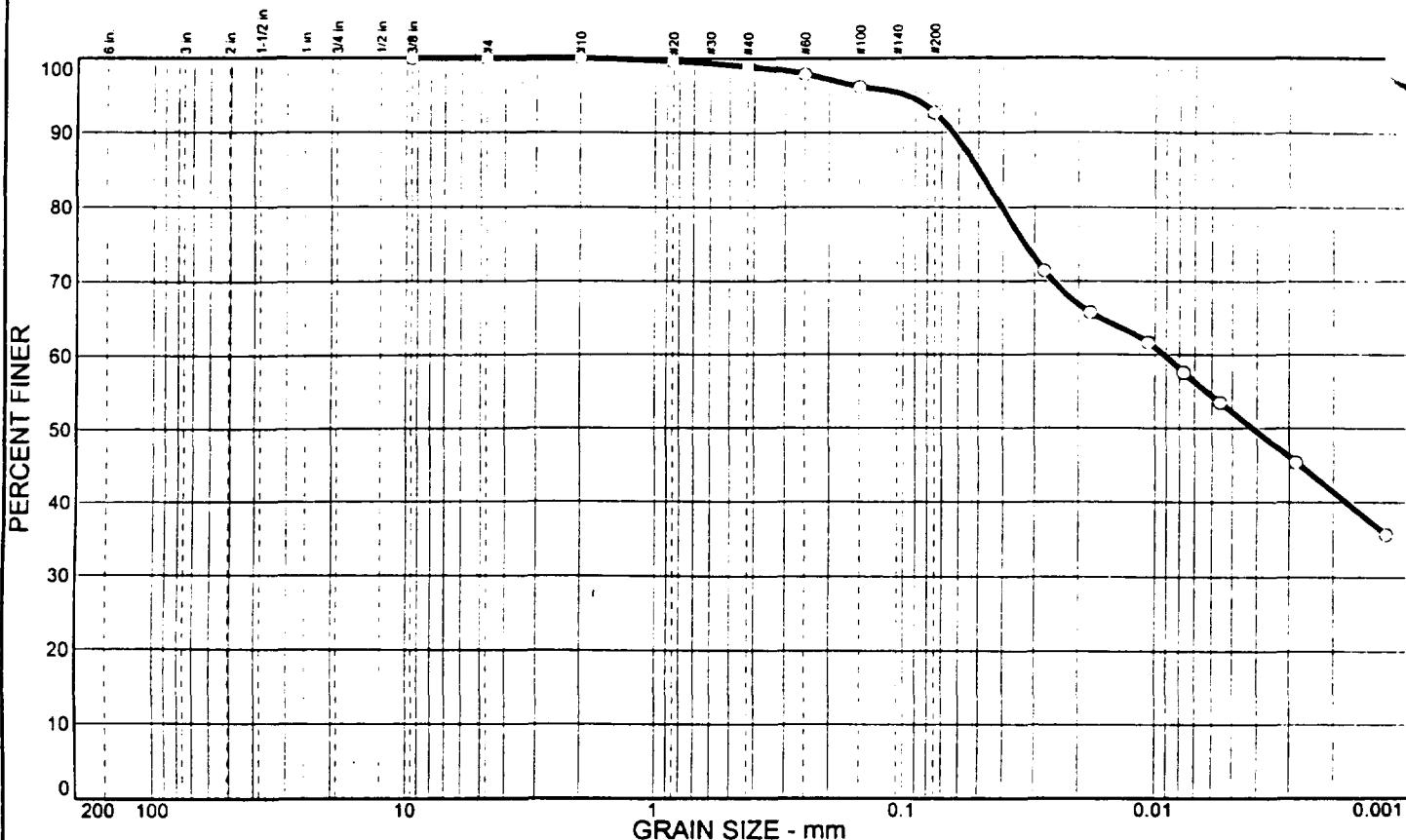
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.4 (% coarse = % fine = 0.4)
SAND = 14.8 (% coarse = 0.7 % medium = 6.7 % fine = 7.4)
SILT = 40.1 % CLAY = 44.7

35= 0.08 D60= 0.02 D50= 0.01
30= 0.00

Jel
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0		7.3	40.5	52.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.375	100.0		
<hr/>			
	GRAIN SIZE		
D ₆₀	0.0092		
D ₃₀			
D ₁₀			
<hr/>			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	O		
#4	100.0		
#10	100.0		
#20	99.6		
#40	98.9		
#60	97.9		
#100	96.2		
#200	92.7		

SOIL DESCRIPTION
 CLAY, TRACE SAND

REMARKS:

Source: COC-5

Sample No.: FASED-CSF-S15W-0-28"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-237

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-5

ample No.: FASED-CSF-S15W-0-28"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: CLAY, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 150.46

are = 0.00

ry sample weight = 150.46

ample split on number 10 sieve

plit sample data:

Sample and tare = 61.66 Tare = .00 Sample weight = 61.66

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.03	100.0
# 20	0.27	99.6
# 40	0.67	98.9
# 60	1.28	97.9
# 100	2.33	96.2
# 200	4.48	92.7

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 100.0

ight of hydrometer sample: 61.66

lculated biased weight= 61.66

able of composite correction values:

Temp, deg C: 19.0 18.0

Comp. corr: -8.0 -8.0

aniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.7	52.0	44.0	0.0139	52.0	7.8	0.0273	71.4
5.00	18.6	48.5	40.5	0.0139	48.5	8.3	0.0179	65.7
15.00	18.6	46.0	38.0	0.0139	46.0	8.8	0.0106	61.6
30.00	18.5	43.5	35.5	0.0139	43.5	9.2	0.0077	57.6
60.00	18.5	41.0	33.0	0.0139	41.0	9.6	0.0056	53.5
250.00	19.0	36.0	28.0	0.0138	36.0	10.4	0.0028	45.4
1440.00	18.6	30.0	22.0	0.0139	30.0	11.4	0.0012	35.7

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

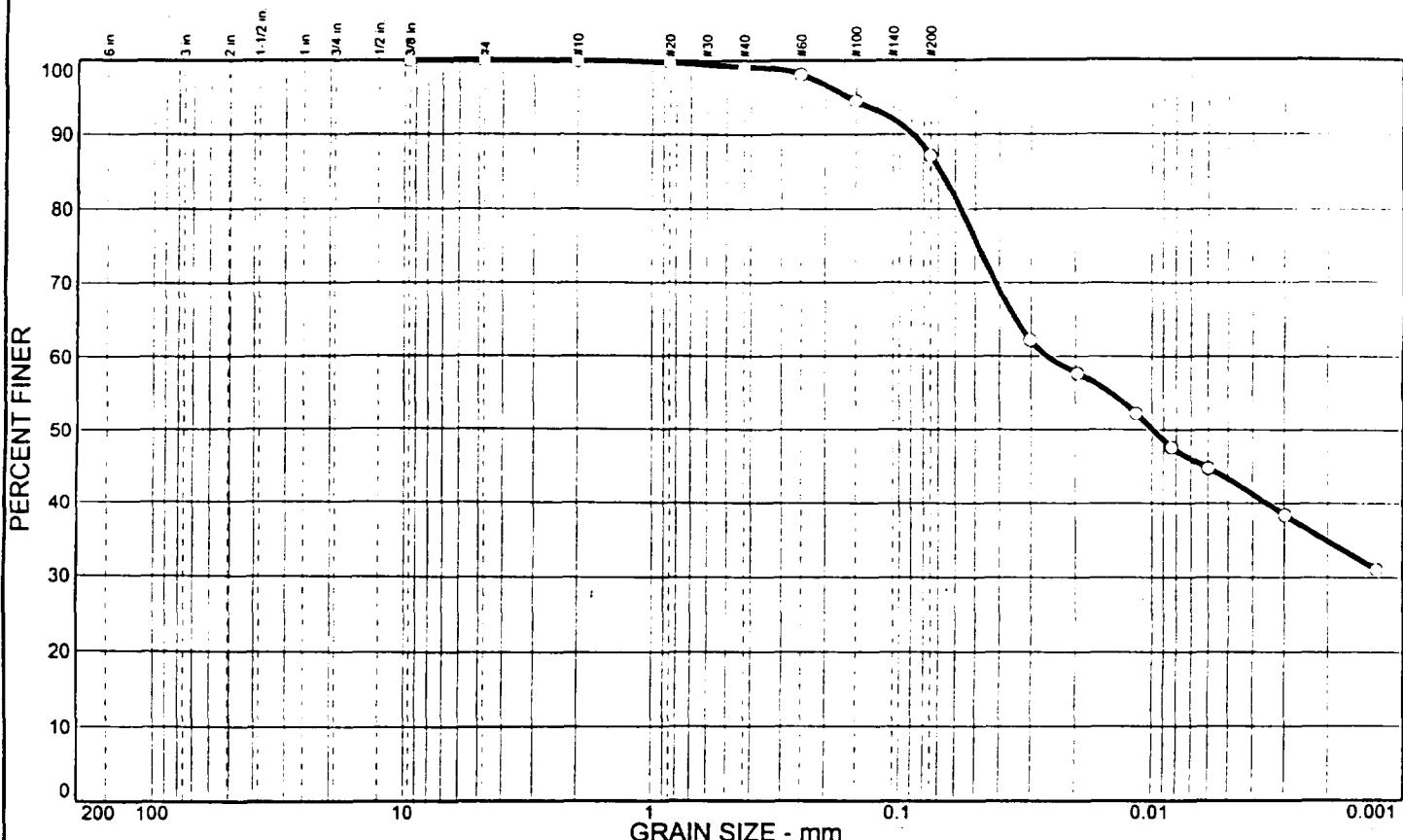
SAND = 7.3 (% coarse = 0.0 % medium = 1.1 % fine = 6.2)

SILT = 40.5 % CLAY = 52.2

85= 0.05 D₆₀= 0.01 D₅₀= 0.00

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		12.8	43.8	43.4	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, LITTLE SAND
	○				○			
.375	100.0			#4	100.0			
GRAN SIZE								
D ₆₀	0.0258			#10	99.9			
D ₃₀				#20	99.7			
D ₁₀				#40	99.1			
COEFFICIENTS								
C _c				#60	98.1			
C _u				#100	94.5			
				#200	87.2			
REMARKS:								
○								

Source: COC-4

Sample No.: FASED-CSF-S16-0-23"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-240

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-4

ample No.: FASED-CSF-S16-0-23"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

try sample and tare= 161.60

are = 0.00

try sample weight = 161.60

ample split on number 10 sieve

plit sample data:

Sample and tare = 54.59 Tare = .00 Sample weight = 54.59

Cumulative weight retained tare= .00

for cumulative weight retained= .00

sieve Cumul. Wt. Percent

retained finer

.375 inch 0.00 100.0

4 0.00 100.0

10 0.21 99.9

20 0.12 99.7

40 0.44 99.1

60 1.00 98.1

100 2.95 94.5

200 6.93 87.2

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.9

eight of hydrometer sample: 54.59

calculated biased weight= 54.64

able of composite correction values:

Temp, deg C: 20.0 18.0

Comp. corr: -8.0 -8.0

aniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

ometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.5	42.0	34.0	0.0139	42.0	9.4	0.0302	62.2
5.00	18.4	39.5	31.5	0.0139	39.5	9.8	0.0195	57.7
15.00	18.4	36.5	28.5	0.0139	36.5	10.3	0.0115	52.2
30.00	18.4	34.0	26.0	0.0139	34.0	10.7	0.0083	47.6
60.00	18.3	32.5	24.5	0.0139	32.5	11.0	0.0060	44.8
250.00	19.0	29.0	21.0	0.0138	29.0	11.5	0.0030	38.4
1440.00	18.7	25.0	17.0	0.0139	25.0	12.2	0.0013	31.1

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL =

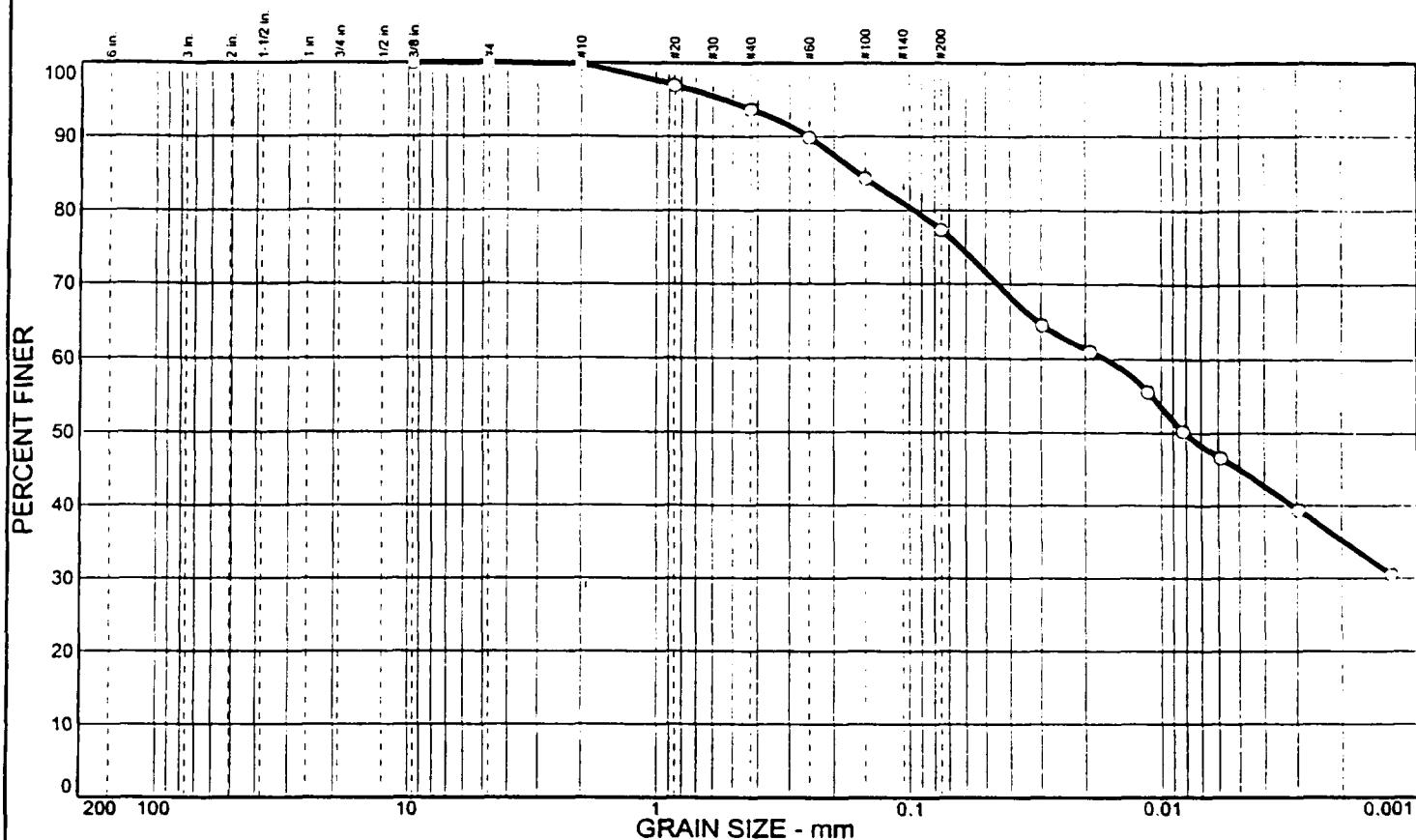
SAND = 12.8 (% coarse = 0.1 % medium = 0.8 % fine = 11.9)

SILT = 43.8 % CLAY = 43.4

D5= 0.07 D60= 0.03 D50= 0.01

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		22.7	32.3	45.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0167		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.8		
#20	97.0		
#40	93.7		
#60	89.9		
#100	84.3		
#200	77.3		

SOIL DESCRIPTION
 CLAY, WITH SAND

REMARKS:

Source: COC-4

Sample No.:

FASED-CSF-S17W-0-16"

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

Object Number: 1999-00-0774

Sample Data

Source: COC-4

Sample No.: FASED-CSF-S17W-0-16"

Elev. or Depth:

Sample Length (in./cm.):

Location:

Description: CLAY, WITH SAND

Liquid Limit: - - -

Plastic Limit: - - -

USCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Dry sample and tare= 193.64

Tare = 0.00

Dry sample weight = 193.64

Sample split on number 10 sieve

Split sample data:

Sample and tare = 55.67 Tare = .00 Sample weight = 55.67

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.47	99.8
# 20	1.58	97.0
# 40	3.38	93.7
# 60	5.53	89.9
# 100	8.67	84.3
# 200	12.55	77.3

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.8

Weight of hydrometer sample: 55.67

Calculated biased weight= 55.78

Table of composite correction values:

Temp, deg C: 19.0 18.0

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.6	44.0	36.0	0.0139	44.0	9.1	0.0296	64.5
5.00	18.6	42.0	34.0	0.0139	42.0	9.4	0.0190	61.0
15.00	18.5	39.0	31.0	0.0139	39.0	9.9	0.0113	55.6
30.00	18.4	36.0	28.0	0.0139	36.0	10.4	0.0082	50.2
60.00	18.4	34.0	26.0	0.0139	34.0	10.7	0.0059	46.6
250.00	19.0	30.0	22.0	0.0138	30.0	11.4	0.0029	39.4
1440.00	18.6	25.0	17.0	0.0139	25.0	12.2	0.0013	30.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

; COBBLES = % GRAVEL =

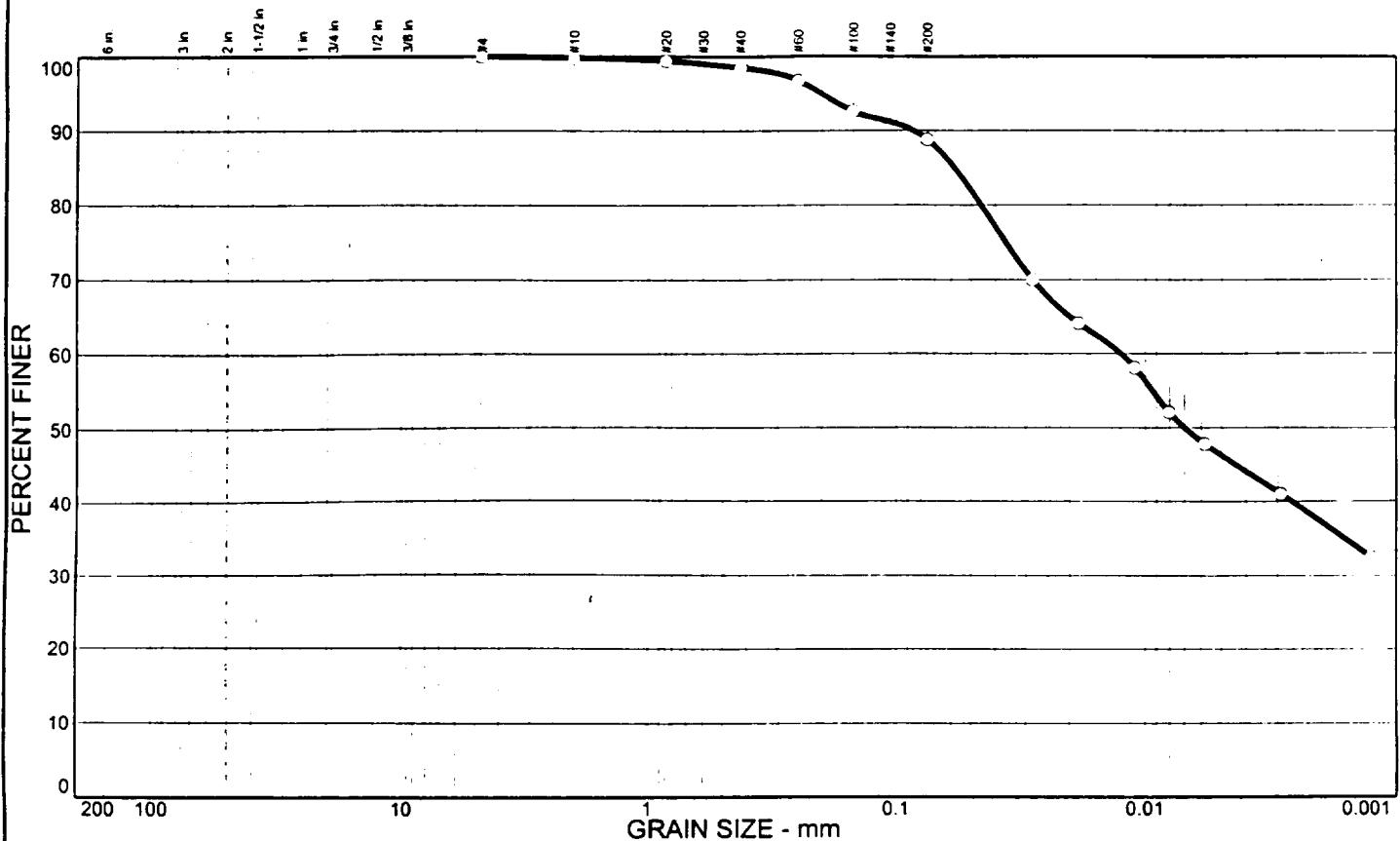
; SAND = 22.7 (% coarse = 0.2 % medium = 6.1 % fine = 16.4)

; SILT = 32.3 % CLAY = 45.0

D₈₅ = 0.16 D₆₀ = 0.02 D₅₀ = 0.01

Laroy
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		11.2	42.5	46.3	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION CLAY, LITTLE SAND
	#4	#10	#20		#40	#60	#100	
	100.0	99.8	99.4		98.5	96.7	92.6	
GRAIN SIZE								
D ₆₀	0.0125							
D ₃₀								
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

Source: COC-4

Sample No.: FASED-CSF-S18E-0-14"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC. Project: SOLUTIA SAUGET AREA I PROJECT
	Project No.: 1999-00-0774

267A-246

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-4
Sample No.: FASED-CSF-S18E-0-14"
Elev. or Depth:
Location:
Description: CLAY, LITTLE SAND
Liquid Limit: - - -
SCS Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 150.17
tare = 0.00
dry sample weight = 150.17
sample split on number 10 sieve
split sample data:

Sample and tare = 58.43 Tare = .00 Sample weight = 58.43
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.25	99.8
# 20	0.26	99.4
# 40	0.75	98.5
# 60	1.79	96.7
# 100	4.23	92.6
# 200	6.45	88.8

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 99.8
Weight of hydrometer sample: 58.43
Calculated biased weight= 58.55
Table of composite correction values:

Temp, deg C: 21.0 19.0
Comp. corr: -8.0 -8.0

Eniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.6	49.0	41.0	0.0139	49.0	8.3	0.0282	70.0
5.00	18.6	45.5	37.5	0.0139	45.5	8.8	0.0185	64.1
15.00	18.6	42.0	34.0	0.0139	42.0	9.4	0.0110	58.1
30.00	18.5	38.5	30.5	0.0139	38.5	10.0	0.0080	52.1
60.00	18.4	36.0	28.0	0.0139	36.0	10.4	0.0058	47.8
250.00	19.0	32.0	24.0	0.0138	32.0	11.0	0.0029	41.0
1440.00	18.6	27.0	19.0	0.0139	27.0	11.9	0.0013	32.5

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

; COBBLES = % GRAVEL =

; SAND = 11.2 (% coarse = 0.2 % medium = 1.3 % fine = 9.7)

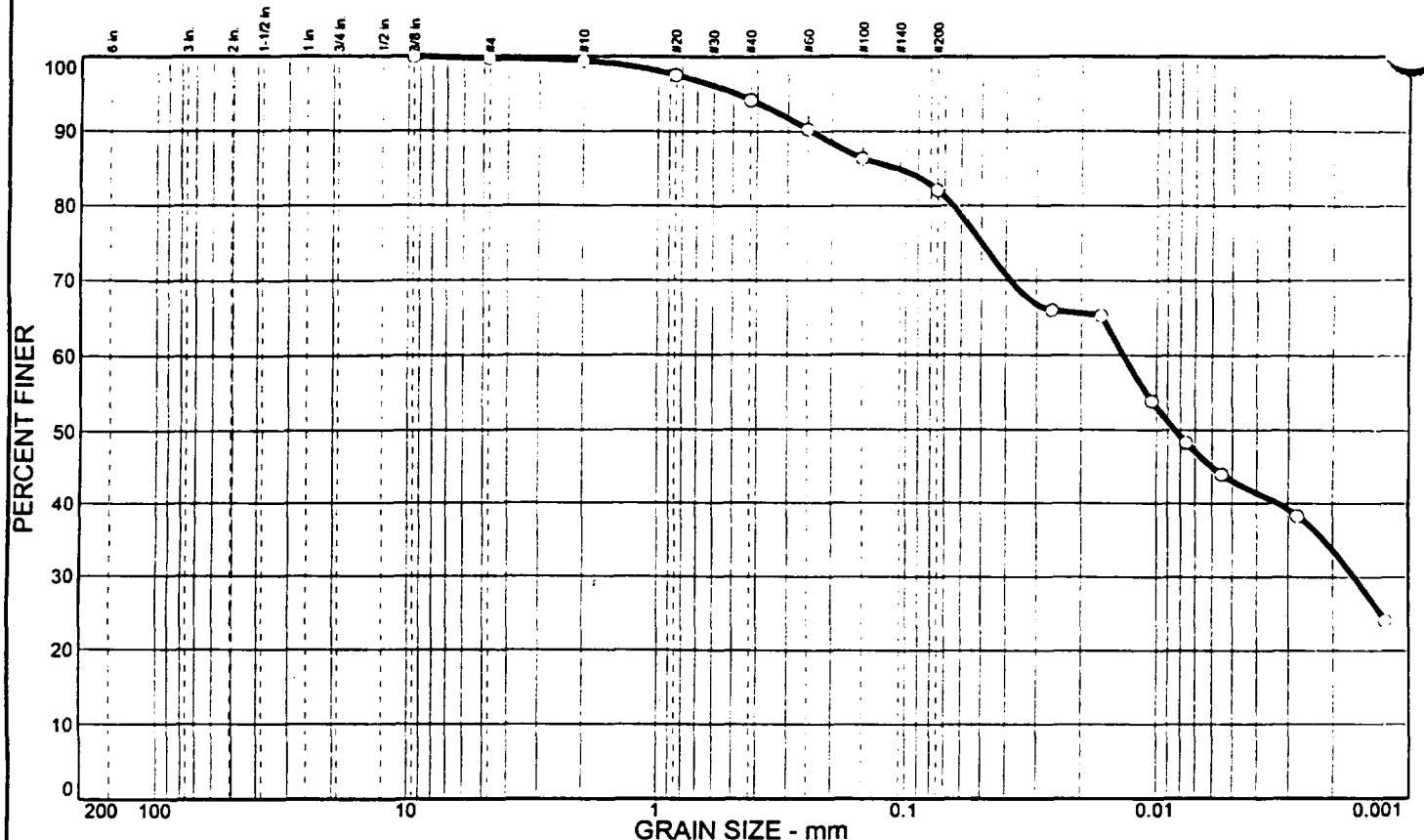
; SILT = 42.5 % CLAY = 46.3

D₈₅= 0.06 D₆₀= 0.01 D₅₀= 0.01



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.3	17.6	39.0	43.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
<hr/>			
○	GRAIN SIZE		
D ₆₀	0.0135		
D ₃₀	0.0016		
D ₁₀			
<hr/>			
○	COEFFICIENTS		
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.7		
#10	99.4		
#20	97.5		
#40	94.2		
#60	90.3		
#100	86.4		
#200	82.1		

SOIL DESCRIPTION
 CLAY, WITH SAND

REMARKS:

○ Source: COC-10

Sample No.: FASED-CSF-S19-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-249

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-10
Sample No.: FASED-CSF-S19-0-13"
Elev. or Depth:
Location:
Description: CLAY, WITH SAND
Liquid Limit: - - -
SCS Classification: - - -
AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial
Dry sample and tare= 72.04
Tare = 0.00
Dry sample weight = 72.04
Sample split on number 10 sieve
Split sample data:
Sample and tare = 70.05 Tare = .00 Sample weight = 70.05
Cumulative weight retained tare= .00
for cumulative weight retained= .00
Sieve Cumul. Wt. Percent
retained finer
.375 inch 0.00 100.0
4 0.23 99.7
10 0.41 99.4
20 1.33 97.5
40 3.70 94.2
60 6.45 90.3
100 9.13 86.4
200 12.19 82.1

Hydrometer Analysis Data

Separation sieve is #10
Percent -#10 based upon complete sample= 99.4
Weight of hydrometer sample: 70.05
Calculated biased weight= 70.47
Table of composite correction values:
Temp, deg C: 22.0 18.0
Comp. corr: -8.0 -8.0

Enniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.0	54.5	46.5	0.0136	54.5	7.4	0.0262	66.0
5.00	20.0	54.0	46.0	0.0136	54.0	7.4	0.0166	65.3
15.00	20.2	46.0	38.0	0.0136	46.0	8.8	0.0104	53.9
30.00	20.6	42.0	34.0	0.0135	42.0	9.4	0.0076	48.3
60.00	20.8	39.0	31.0	0.0135	39.0	9.9	0.0055	44.0
250.00	21.4	35.0	27.0	0.0134	35.0	10.6	0.0028	38.3
1440.00	21.3	25.0	17.0	0.0134	25.0	12.2	0.0012	24.1

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.3 (% coarse = % fine = 0.3)

SAND = 17.6 (% coarse = 0.3 % medium = 5.2 % fine = 12.1)

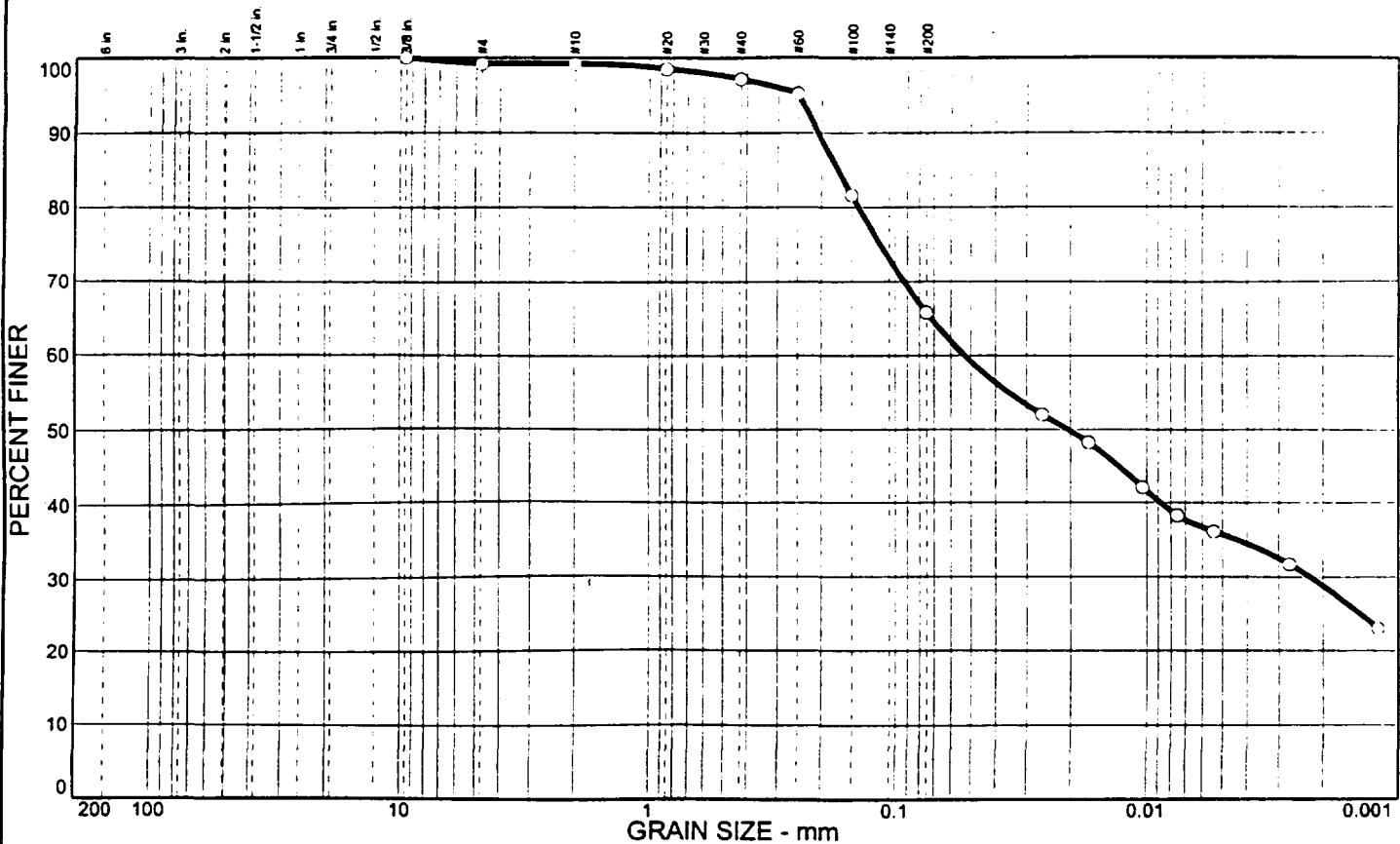
SILT = 39.0 % CLAY = 43.1

D5 = 0.11 D60 = 0.01 D50 = 0.01

D0 = 0.00

John A. Thompson
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.8	33.4	30.1	35.7	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0528		
D ₃₀	0.0023		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.2		
#10	99.2		
#20	98.5		
#40	97.2		
#60	95.2		
#100	81.6		
#200	65.8		

SOIL DESCRIPTION
 FINE SANDY CLAY

REMARKS:

○ Source: COC-10

Sample No.: FASED-CSF-S20-0-12"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-252

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource: COC-10

ample No.: FASED-CSF-S20-0-12"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: FINE SANDY CLAY

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 126.97

are = 0.00

ry sample weight = 126.97

ample split on number 10 sieve

plit sample data:

Sample and tare = 90.65 Tare = .00 Sample weight = 90.65

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.97	99.2
# 10	1.06	99.2
# 20	0.68	98.5
# 40	1.82	97.2
# 60	3.67	95.2
# 100	16.09	81.6
# 200	30.55	65.8

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.2

ight of hydrometer sample: 90.65

calculated biased weight= 91.38

able of composite correction values:

Temp, deg C: 20.0 21.5

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.1	55.5	47.5	0.0136	55.5	7.2	0.0258	52.0
5.00	20.1	52.0	44.0	0.0136	52.0	7.8	0.0170	48.2
15.00	20.2	46.5	38.5	0.0136	46.5	8.7	0.0103	42.1
30.00	20.6	43.0	35.0	0.0135	43.0	9.2	0.0075	38.3
60.00	20.9	41.0	33.0	0.0135	41.0	9.6	0.0054	36.1
250.00	21.5	37.0	29.0	0.0134	37.0	10.2	0.0027	31.7
1440.00	21.0	29.0	21.0	0.0135	29.0	11.5	0.0012	23.0

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 0.8 (% coarse = % fine = 0.8)

SAND = 33.4 (% coarse = 0.0 % medium = 2.0 % fine = 31.4)

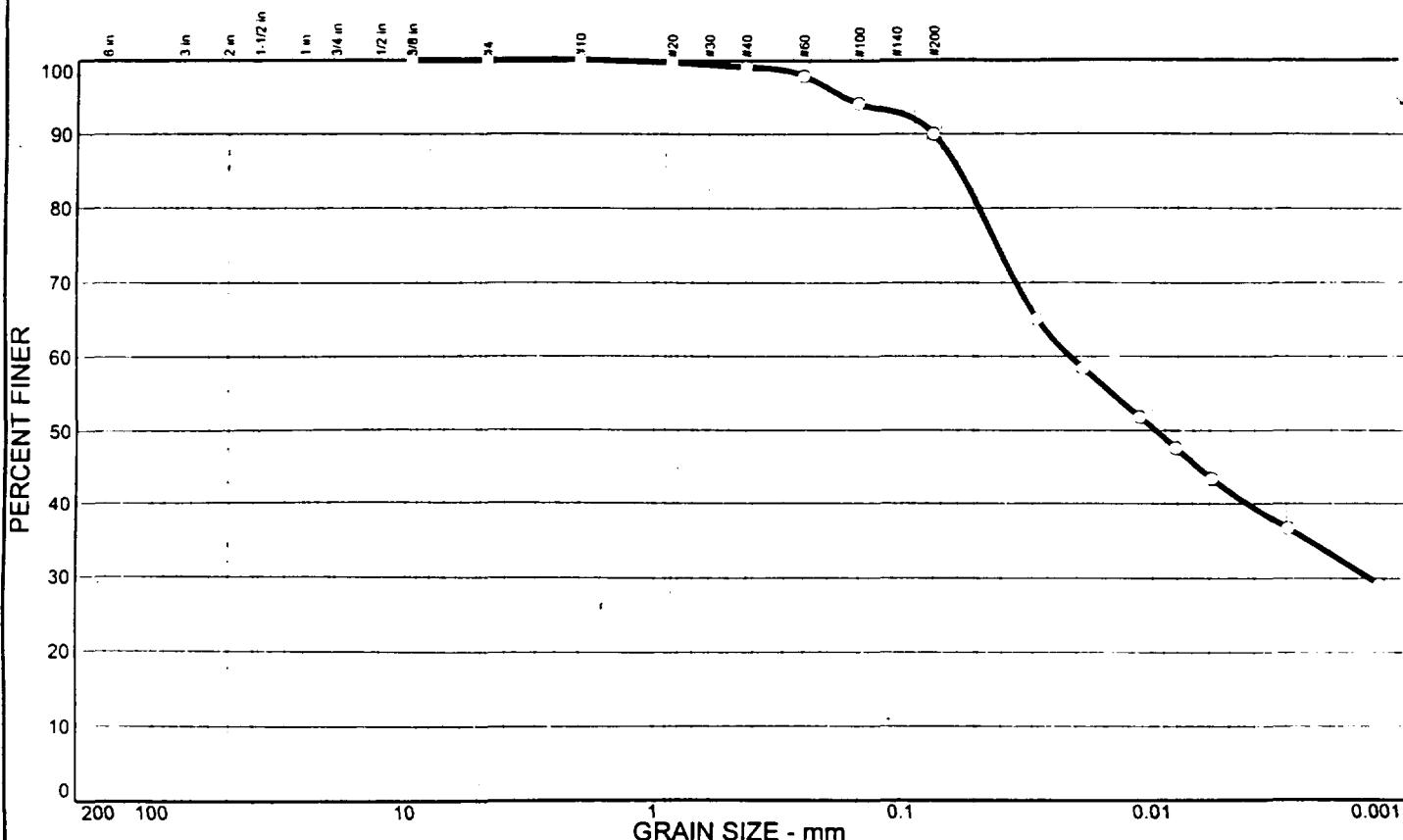
SILT = 30.1 % CLAY = 35.7

85= 0.17 D₆₀= 0.05 D₅₀= 0.02

30= 0.00

Jalyn
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
		10.0	48.4	41.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			<u>SOIL DESCRIPTION</u> SILT, TRACE SAND
.375	100.0			#4	100.0			
				#10	100.0			
				#20	99.7			
				#40	99.1			
				#60	97.9			
				#100	94.1			
				#200	90.0			
<u>GRAIN SIZE</u>								
D ₆₀	0.0213							
D ₃₀	0.0014							
D ₁₀								
<u>COEFFICIENTS</u>								
C _c								
C _u								

Source: COC-5

Sample No.: FASED-CSF-S21-0-13"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC. Project: SOLUTIA SAUGET AREA I PROJECT Project No.: 1999-00-0774
	267A-255 Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-5
ample No.: FASED-CSF-S21-0-13"
lev. or Depth: Sample Length (in./cm.):
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - - Plastic Limit: - - -
SCS Classification: - - - AASHTO Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 129.43
are = 0.00
ry sample weight = 129.43
ample split on number 10 sieve
plit sample data:

Sample and tare = 59.89 Tare = .00 Sample weight = 59.89

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.03	100.0
# 20	0.19	99.7
# 40	0.56	99.1
# 60	1.29	97.9
# 100	3.55	94.1
# 200	5.99	90.0

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
eight of hydrometer sample: 59.89
alculated biased weight= 59.89
able of composite correction values:

Temp, deg C: 19.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

ometer type: 152H

ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.6	47.0	39.0	0.0139	47.0	8.6	0.0288	65.1
5.00	18.7	43.0	35.0	0.0139	43.0	9.2	0.0189	58.4
15.00	18.6	39.0	31.0	0.0139	39.0	9.9	0.0113	51.8
30.00	18.6	36.5	28.5	0.0139	36.5	10.3	0.0081	47.6
60.00	18.4	34.0	26.0	0.0139	34.0	10.7	0.0059	43.4
250.00	19.0	30.0	22.0	0.0138	30.0	11.4	0.0029	36.7
1440.00	18.6	25.5	17.5	0.0139	25.5	12.1	0.0013	29.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

SAND = 10.0 (% coarse = 0.0 % medium = 0.9 % fine = 9.1)

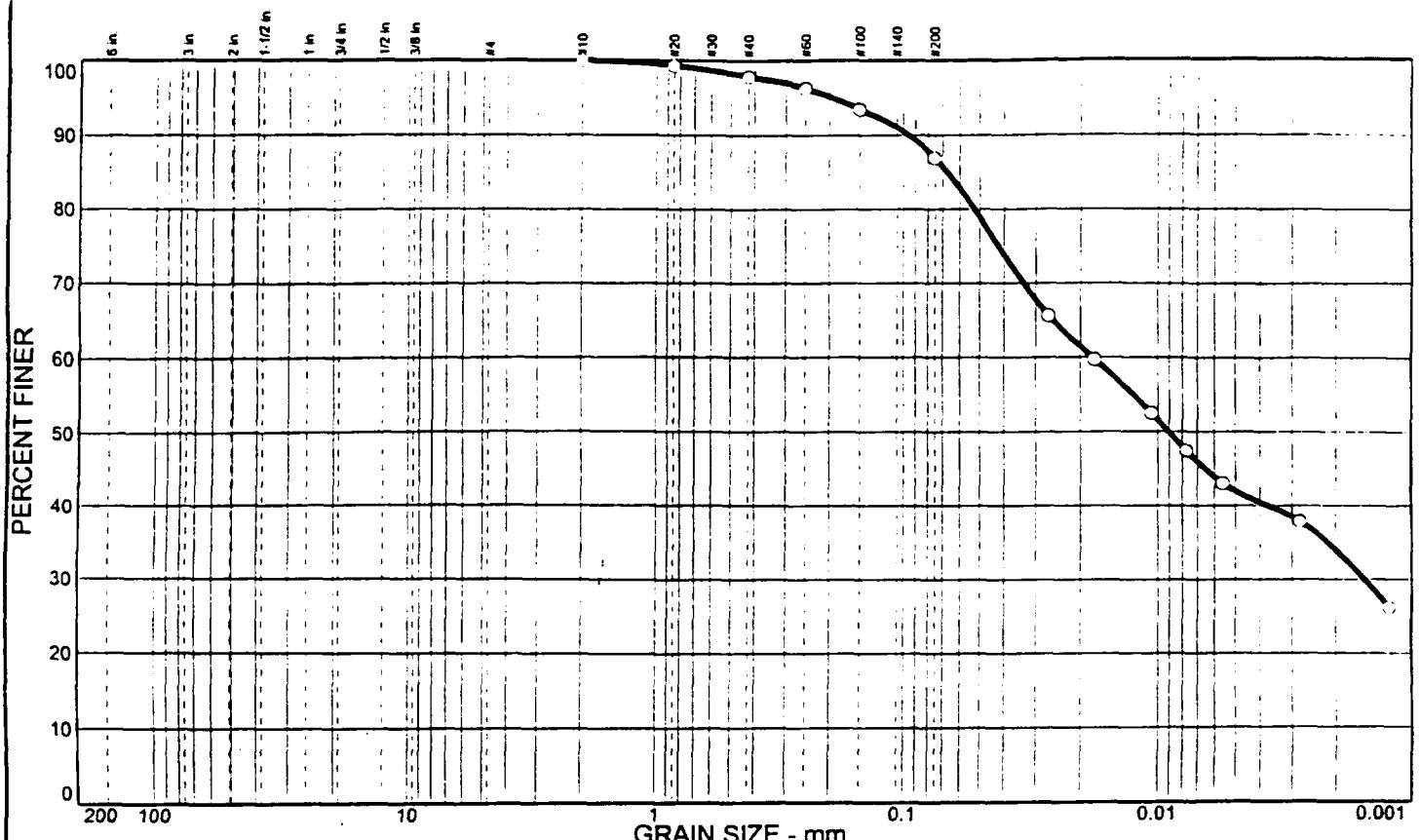
SILT = 48.4 % CLAY = 41.6

D5= 0.06 D60= 0.02 D50= 0.01

D0= 0.00

Jul 7
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
C		13.1	44.9	42.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0180		
D ₃₀	0.0015		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#10	100.0		
#20	99.3		
#40	97.9		
#60	96.3		
#100	93.5		
#200	86.9		

SOIL DESCRIPTION
○ SILT, LITTLE SAND

REMARKS:
○

Source: COC-10

Sample No.: FASED-CSF-S22E-0-20IN

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-258

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource: COC-10

ample No.: FASED-CSF-S22-0-20"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 96.04

are = 0.00

ry sample weight = 96.04

ample split on number 10 sieve

plit sample data:

Sample and tare = 68.63 Tare = .00 Sample weight = 68.63

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 10	0.00	100.0
# 20	0.51	99.3
# 40	1.43	97.9
# 60	2.55	96.3
# 100	4.49	93.5
# 200	8.97	86.9

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 100.0

eight of hydrometer sample: 68.63

alculated biased weight= 68.63

able of composite correction values:

Temp, deg C: 19.5 21.5

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

ydrometer type: 152H

'ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.8	53.0	45.0	0.0137	53.0	7.6	0.0267	65.6
5.00	19.9	49.0	41.0	0.0137	49.0	8.3	0.0176	59.7
15.00	20.1	44.0	36.0	0.0136	44.0	9.1	0.0106	52.5
30.00	20.4	40.5	32.5	0.0136	40.5	9.7	0.0077	47.4
60.00	20.6	37.5	29.5	0.0135	37.5	10.1	0.0056	43.0
250.00	21.2	34.0	26.0	0.0134	34.0	10.7	0.0028	37.9
1440.00	20.9	26.0	18.0	0.0135	26.0	12.0	0.0012	26.2

Fractional Components

ravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 13.1 (% coarse = % medium = 2.1 % fine = 11.0)

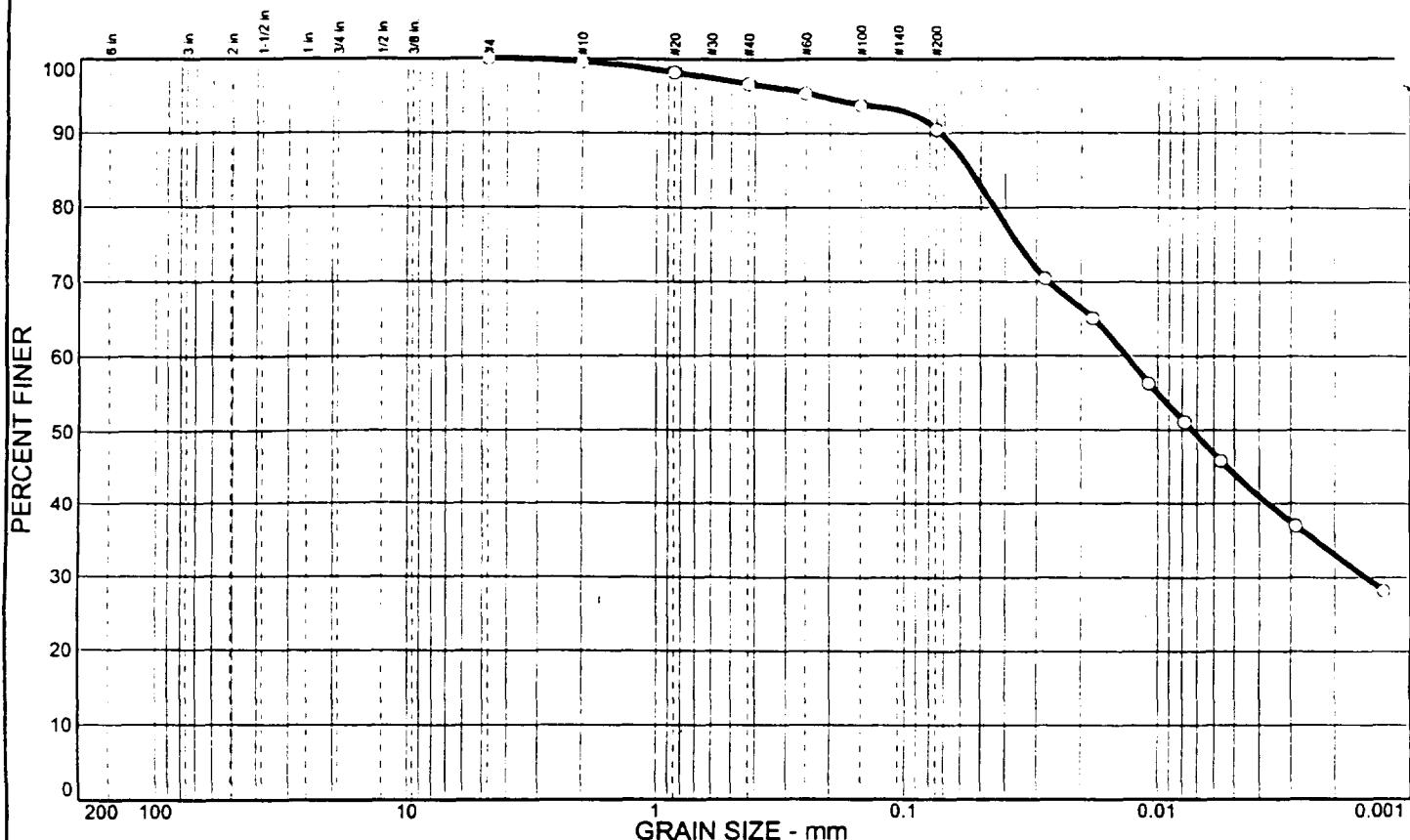
SILT = 44.9 % CLAY = 42.0

85= 0.07 D60= 0.02 D50= 0.01

30= 0.00

Jal 1c
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
C		9.5	46.5	44.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRAIN SIZE			
D ₆₀	0.0133		
D ₃₀	0.0015		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.6		
#20	98.2		
#40	96.7		
#60	95.4		
#100	93.8		
#200	90.5		

SOIL DESCRIPTION
○ SILT, TRACE SAND
REMARKS:
○

○ Source: COC-1

Sample No.: FASED-CSF-S23-0-15"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-261

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ject: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSF-S23-0-15"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial
ry sample and tare= 97.80
are = 0.00
ry sample weight = 97.80
ample split on number 10 sieve
plit sample data:
Sample and tare = 56.57 Tare = .00 Sample weight = 56.57
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.44	99.6
# 20	0.78	98.2
# 40	1.63	96.7
# 60	2.41	95.4
# 100	3.27	93.8
# 200	5.15	90.5

Hydrometer Analysis Data

Separation sieve is #10
ercent -#10 based upon complete sample= 99.6
ight of hydrometer sample: 56.57
alculated biased weight= 56.80
able of composite correction values:
Temp, deg C: 19.5 22.0
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
-ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.0	48.0	40.0	0.0135	48.0	8.4	0.0277	70.4
5.00	21.1	45.0	37.0	0.0135	45.0	8.9	0.0180	65.1
15.00	21.1	40.0	32.0	0.0135	40.0	9.7	0.0108	56.3
30.00	21.5	37.0	29.0	0.0134	37.0	10.2	0.0078	51.1
60.00	21.6	34.0	26.0	0.0134	34.0	10.7	0.0057	45.8
250.00	22.5	29.0	21.0	0.0132	29.0	11.5	0.0028	37.0
1440.00	19.2	24.0	16.0	0.0138	24.0	12.4	0.0013	28.2

Fractional Components

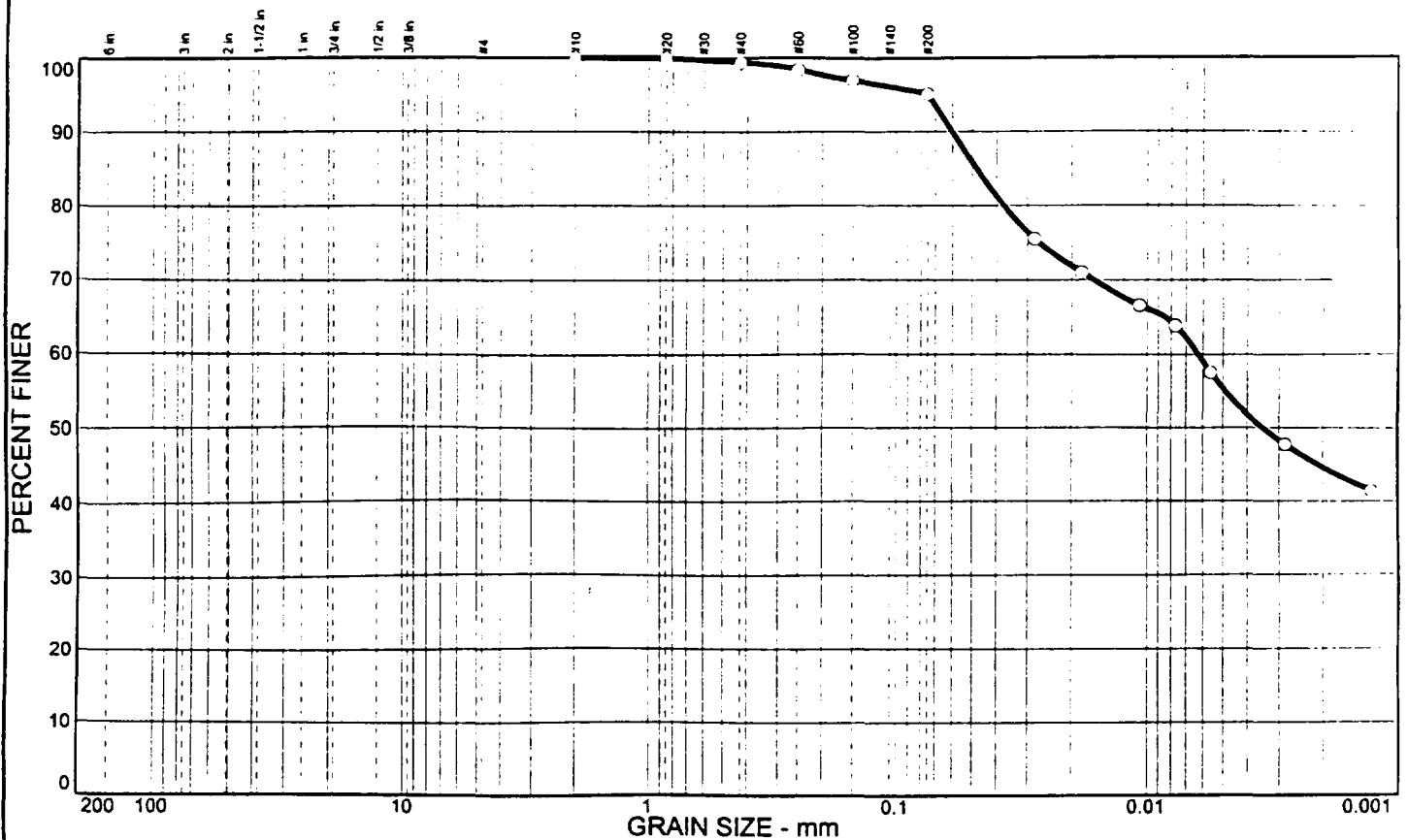
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =
SAND = 9.5 (% coarse = 0.4 % medium = 2.9 % fine = 6.2)
SILT = 46.5 % CLAY = 44.0

85= 0.06 D₆₀= 0.01 D₅₀= 0.01
30= 0.00

Barry
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		4.9	39.7	55.4	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
GRANULARITY			
D ₆₀	0.0063		
D ₃₀			
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#10	100.0		
#20	100.0		
#40	99.4		
#60	98.4		
#100	97.0		
#200	95.1		

SOIL DESCRIPTION ○ CLAY, TRACE SAND
REMARKS: ○

○ Source: COC-6

Sample No.: FASED-CSF-S24W-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-264

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

ient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

urce: COC-6
mple No.: FASED-CSF-S24W-0-13"
ev. or Depth: Sample Length (in./cm.):
cation:
scription: CLAY, TRACE SAND
iquid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
sting Remarks:

Mechanical Analysis Data

Initial
y sample and tare= 145.79
re = 0.00
y sample weight = 145.79
mple split on number 10 sieve
lit sample data:
Sample and tare = 55.60 Tare = .00 Sample weight = 55.60
nulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.01	100.0
# 40	0.33	99.4
# 60	0.90	98.4
# 100	1.68	97.0
# 200	2.71	95.1

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 55.6
lculated biased weight= 55.60
ble of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
ecific gravity correction factor= 1.000
drometer type: 152H
fective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	50.0	42.0	0.0140	50.0	8.1	0.0281	75.5
5.00	18.2	47.5	39.5	0.0140	47.5	8.5	0.0182	71.0
15.00	18.4	45.0	37.0	0.0139	45.0	8.9	0.0107	66.6
30.00	18.4	43.5	35.5	0.0139	43.5	9.2	0.0077	63.9
60.00	18.7	40.0	32.0	0.0139	40.0	9.7	0.0056	57.6
250.00	19.5	34.5	26.5	0.0137	34.5	10.6	0.0028	47.7
1440.00	15.4	31.0	23.0	0.0145	31.0	11.2	0.0013	41.4

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL =

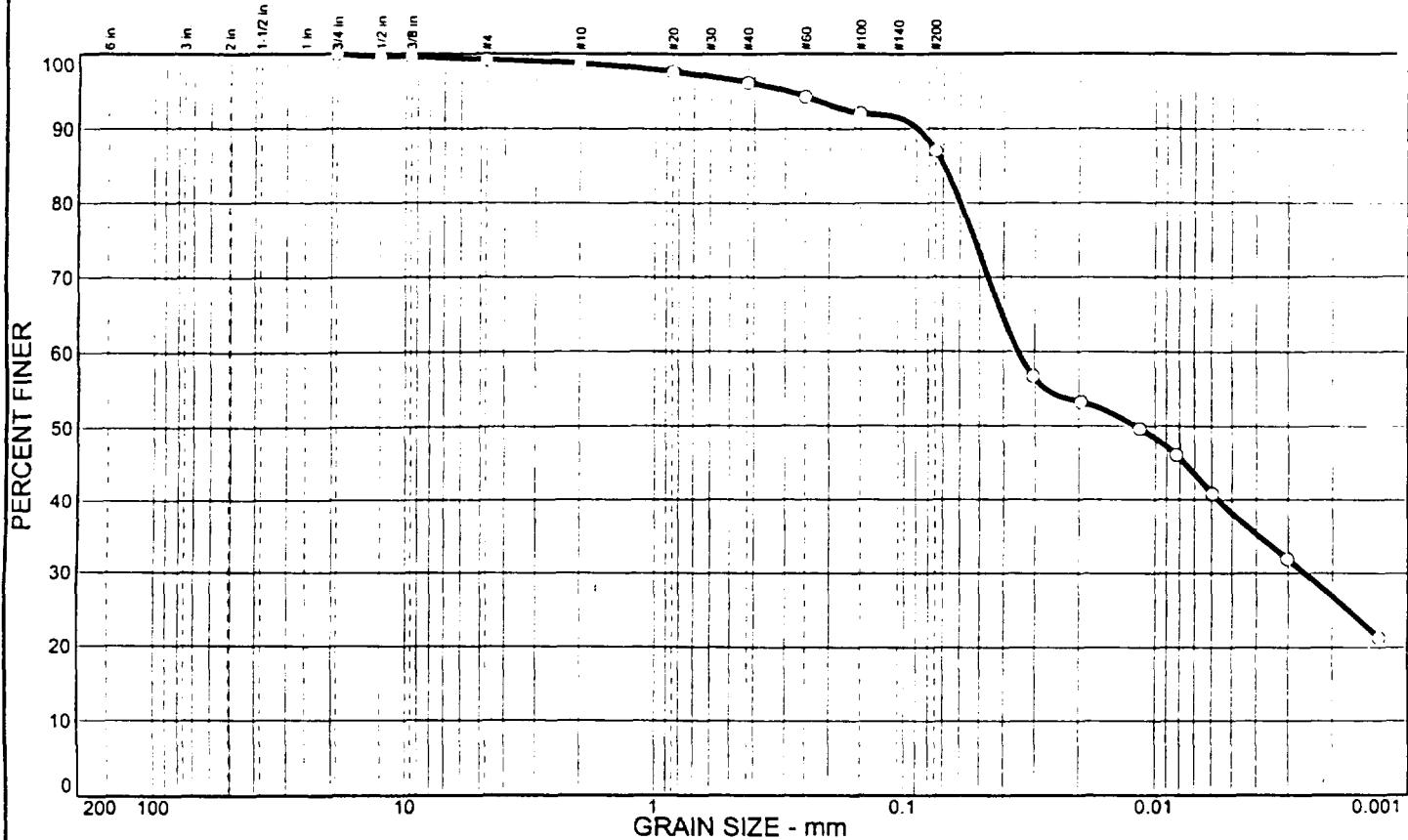
SAND = 4.9 (% coarse = % medium = 0.6 % fine = 4.3)

SILT = 39.7 (% CLAY = 55.4)

D₅= 0.05 D₆₀= 0.01 D₅₀= 0.00

J. L. Murphy
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	0.8	12.1	48.9	38.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	C		
.75	100.0		
.5	99.6		
.375	99.6		
GRANULARITY			
D ₆₀	0.0348		
D ₃₀	0.0026		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	C		
#4	99.2		
#10	98.7		
#20	97.6		
#40	96.2		
#60	94.3		
#100	92.1		
#200	87.1		

SOIL DESCRIPTION
 SILT, LITTLE SAND

REMARKS.

○ Source: COC-8

Sample No.: FASED-CSF-S25E-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-267

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-8
ample No.: FASED-CSF-S25E-0-10"
ev. or Depth:
ocation:
escription: SILT, LITTLE SAND
iquid Limit: - - -
CS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Weight sample and tare= 117.46
re = 0.00
Weight sample weight = 117.46
mple split on number 10 sieve
lit sample data:
Sample and tare = 55.71 Tare = .00 Sample weight = 55.71
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent retained	finer
.75 inch	0.00	100.0	
.5 inch	0.49	99.6	
.375 inch	0.49	99.6	
# 4	0.89	99.2	
# 10	1.51	98.7	
# 20	0.63	97.6	
# 40	1.44	96.2	
# 60	2.47	94.3	
# 100	3.75	92.1	
# 200	6.56	87.1	

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 98.7
ight of hydrometer sample: 55.71
lculated biased weight= 56.44
ble of composite correction values:
Temp, deg C: 20.0 18.0
Comp. corr: -8.0 -8.0

Focus correction only= 0
specific gravity of solids= 2.65
specific gravity correction factor= 1.000
drometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.1	40.0	32.0	0.0138	40.0	9.7	0.0304	56.7
5.00	19.2	38.0	30.0	0.0138	38.0	10.1	0.0196	53.2
15.00	19.3	36.0	28.0	0.0138	36.0	10.4	0.0115	49.6
30.00	19.2	34.0	26.0	0.0138	34.0	10.7	0.0082	46.1
60.00	19.5	31.0	23.0	0.0137	31.0	11.2	0.0059	40.8
250.00	19.5	26.0	18.0	0.0137	26.0	12.0	0.0030	31.9
1440.00	19.6	20.0	12.0	0.0137	20.0	13.0	0.0013	21.3

Fractional Components

ravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 0.8 (% coarse = % fine = 0.8)

SAND = 12.1 (% coarse = 0.5 % medium = 2.5 % fine = 9.1)

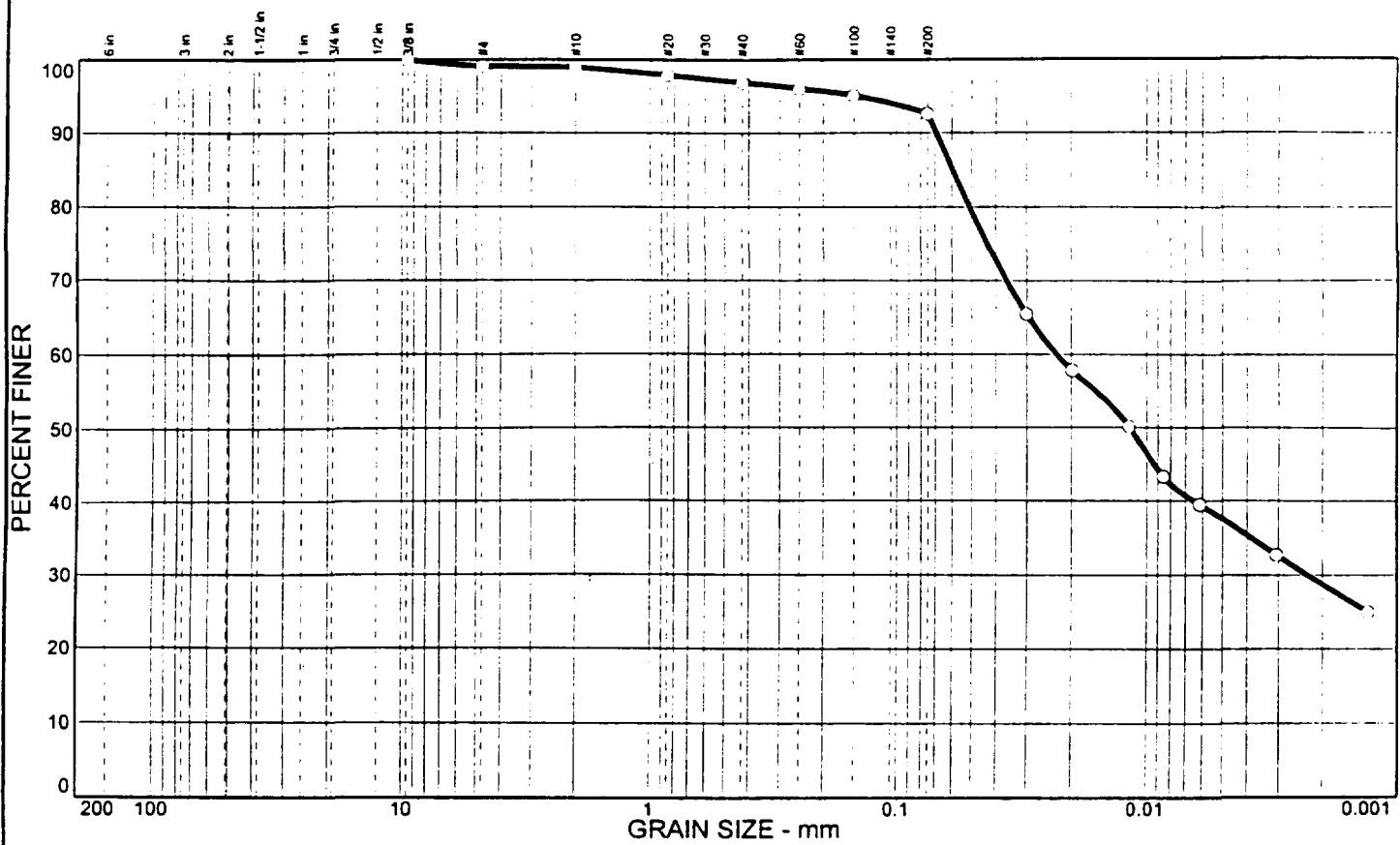
SILT = 48.9 % CLAY = 38.2

35= 0.07 D₆₀= 0.03 D₅₀= 0.01

30= 0.00

Jul 4/6
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.9	6.5	55.0	37.6	---	---	---	---

SIEVE inches size	PERCENT FINER		
	O		
.375	100.0		
GRANULARITY			
D ₆₀	0.0227		
D ₃₀	0.0023		
D ₁₀			
COHESION			
C _c			
C _u			

Source: COC-4

SIEVE number size	PERCENT FINER		
	O		
#4	99.1		
#10	99.0		
#20	97.9		
#40	96.9		
#60	96.0		
#100	95.1		
#200	92.6		

SOIL DESCRIPTION
O SILT, TRACE SAND
REMARKS:
O

Sample No.: FASED-CSF-S26W-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-270

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

roject Number: 1999-00-0774

Sample Data

ource: COC-4

ample No.: FASED-CSF-S26W-0-13"

lev. or Depth:

Sample Length (in./cm.):

cation:

escription: SILT, TRACE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 97.63

are = 0.00

ry sample weight = 97.63

ample split on number 10 sieve

plit sample data:

Sample and tare = 81.86 Tare = .00 Sample weight = 81.86

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.91	99.1
# 10	0.98	99.0
# 20	0.94	97.9
# 40	1.71	96.9
# 60	2.47	96.0
# 100	3.26	95.1
# 200	5.28	92.6

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 99.0

eight of hydrometer sample: 51.41

calculated biased weight= 51.93

able of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

aniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.6	42.0	34.0	0.0139	42.0	9.4	0.0301	65.5
5.00	18.5	38.0	30.0	0.0139	38.0	10.1	0.0197	57.8
15.00	18.5	34.0	26.0	0.0139	34.0	10.7	0.0118	50.1
30.00	18.4	30.5	22.5	0.0139	30.5	11.3	0.0085	43.3
60.00	18.3	28.5	20.5	0.0139	28.5	11.6	0.0061	39.5
250.00	19.0	25.0	17.0	0.0138	25.0	12.2	0.0031	32.7
1440.00	18.6	21.0	13.0	0.0139	21.0	12.9	0.0013	25.0

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.9 (% coarse = % fine = 0.9)

SAND = 6.5 (% coarse = 0.1 % medium = 2.1 % fine = 4.3)

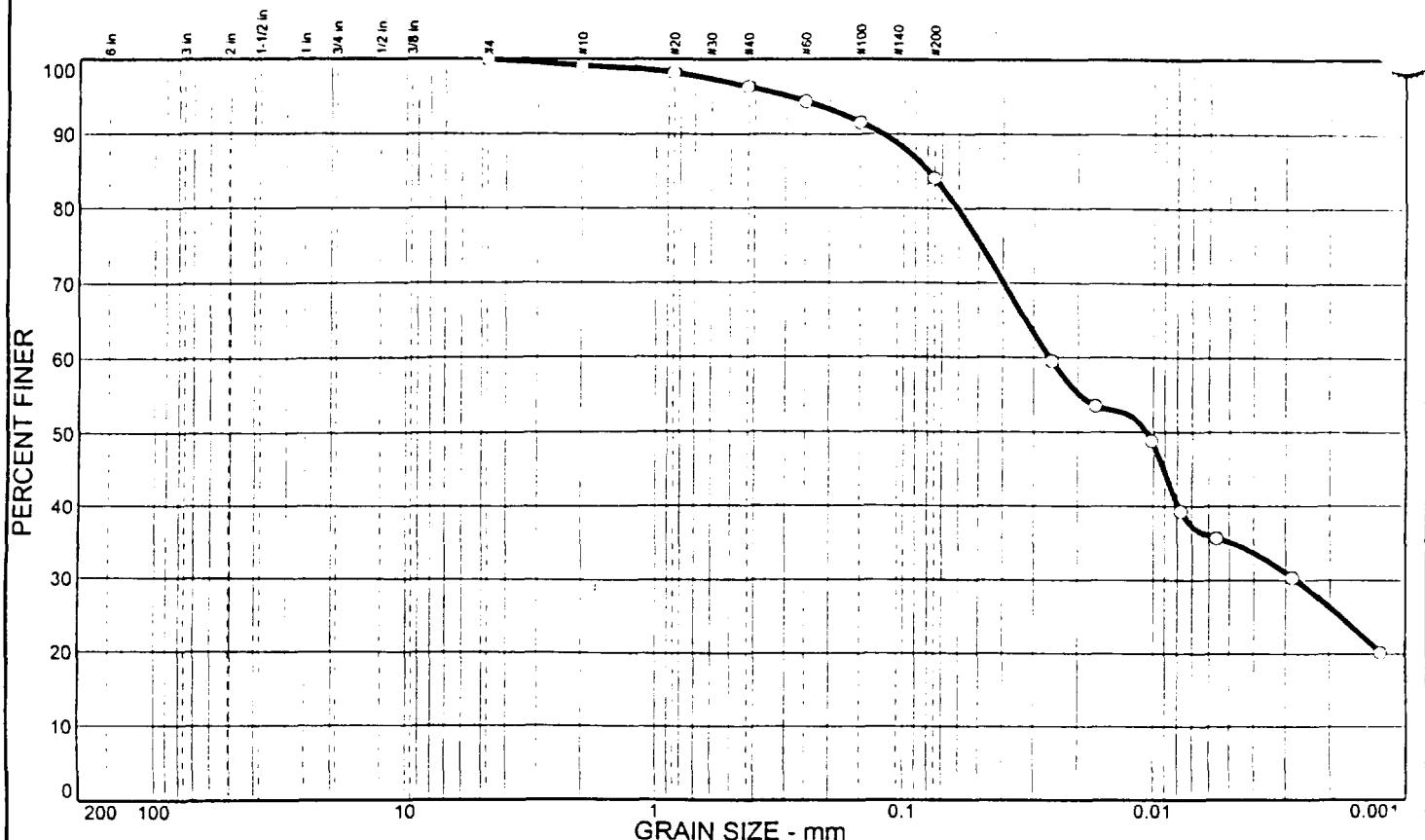
SILT = 55.0 % CLAY = 37.6

D₅= 0.06 D₆₀= 0.02 D₅₀= 0.01

D₀= 0.00

Joe YC
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		15.9	49.0	35.1	---	---	---	---

SIEVE inches size	PERCENT FINER		
	C		
GRANULARITY			
D ₆₀	0.0259		
D ₃₀	0.0027		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-10

SIEVE number size	PERCENT FINER		
	O		
#4	100.0		
#10	99.1		
#20	98.2		
#40	96.3		
#60	94.4		
#100	91.6		
#200	84.1		

SOIL DESCRIPTION
○ SILT, WITH SAND

REMARKS:
○

Sample No.: FASED-CSF-S27E-0-16"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-273

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-10
ample No.: FASED-CSF-S27E-0-16"
lev. or Depth:
ocation:
escription: SILT, WITH SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 157.26
are = 0.00
ry sample weight = 157.26
ample split on number 10 sieve
plit sample data:

Sample and tare = 83.30 Tare = .00 Sample weight = 83.30

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	1.37	99.1
# 20	0.80	98.2
# 40	2.34	96.3
# 60	3.92	94.4
# 100	6.33	91.6
# 200	12.63	84.1

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.1
eight of hydrometer sample: 83.3
alculated biased weight= 84.06
able of composite correction values:

Temp, deg C: 19.0 20.5

Comp. corr: -8.0 -8.0

aniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
ometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.4	58.0	50.0	0.0137	58.0	6.8	0.0253	59.5
5.00	19.5	53.0	45.0	0.0137	53.0	7.6	0.0169	53.5
15.00	19.6	49.0	41.0	0.0137	49.0	8.3	0.0102	48.8
30.00	19.9	41.0	33.0	0.0137	41.0	9.6	0.0077	39.3
60.00	20.1	38.0	30.0	0.0136	38.0	10.1	0.0056	35.7
250.00	20.5	33.5	25.5	0.0136	33.5	10.8	0.0028	30.3
1440.00	20.4	25.0	17.0	0.0136	25.0	12.2	0.0012	20.2

Fractional Components

Gravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 15.9 (% coarse = 0.9 % medium = 2.8 % fine = 12.2)

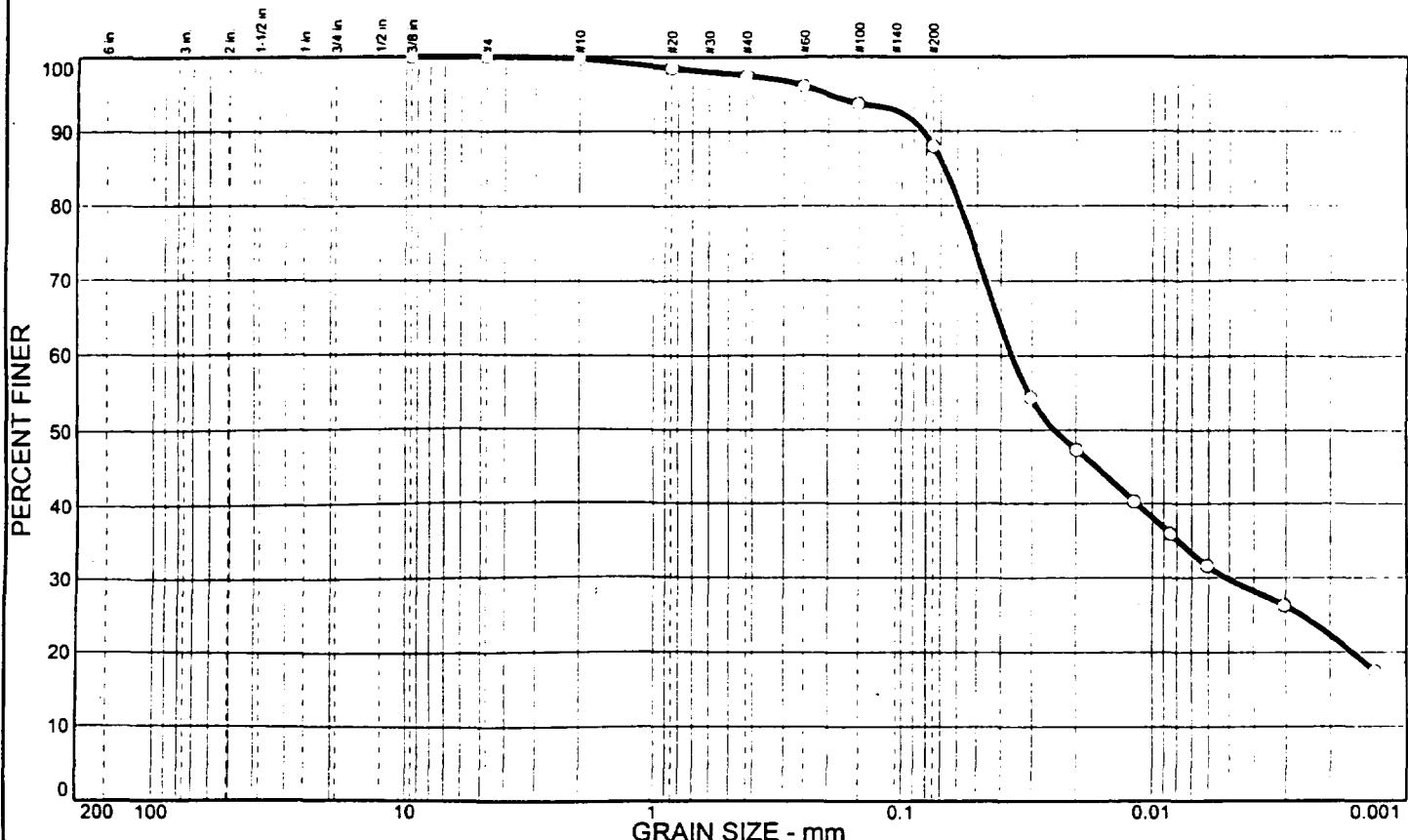
SILT = 49.0 % CLAY = 35.1

85= 0.08 D60= 0.03 D50= 0.01

30= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		12.0	58.3	29.7	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0			#4	100.0			○ SILT, LITTLE SAND
GRAIN SIZE								
D ₆₀	0.0361			#10	99.8			
D ₃₀	0.0052			#20	98.5			
D ₁₀				#40	97.5			
COEFFICIENTS								
C _c				#60	96.1			
C _u				#100	93.7			
				#200	88.0			
REMARKS:								
○								

○ Source: COC-7

Sample No.: FASED-CSF-S28-0-10"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-276

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-7

Sample No.: FASED-CSF-S28-0-10"

Level or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, LITTLE SAND

Liquid Limit: - - -

Plastic Limit: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

My sample and tare = 167.84

Tare = 0.00

My sample weight = 167.84

Sample split on number 10 sieve

Split sample data:

Sample and tare = 56.93 Tare = .00 Sample weight = 56.93

Cumulative weight retained tare = .00

for cumulative weight retained = .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.09	100.0
# 10	0.37	99.8
# 20	0.72	98.5
# 40	1.31	97.5
# 60	2.09	96.1
# 100	3.50	93.7
# 200	6.75	88.0

Hydrometer Analysis Data

Preparation sieve is #10

Percent -#10 based upon complete sample= 99.8

Weight of hydrometer sample: 56.93

Calculated biased weight= 57.04

Table of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.1	39.0	31.0	0.0136	39.0	9.9	0.0303	54.4
5.00	20.1	35.0	27.0	0.0136	35.0	10.6	0.0198	47.3
15.00	20.2	31.0	23.0	0.0136	31.0	11.2	0.0118	40.3
30.00	20.2	28.5	20.5	0.0136	28.5	11.6	0.0085	35.9
60.00	20.2	26.0	18.0	0.0136	26.0	12.0	0.0061	31.6
250.00	20.9	23.0	15.0	0.0135	23.0	12.5	0.0030	26.3
1440.00	19.1	18.0	10.0	0.0138	18.0	13.3	0.0013	17.5

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 12.0 (% coarse = 0.2 % medium = 2.3 % fine = 9.5)

SILT = 58.3 % CLAY = 29.7

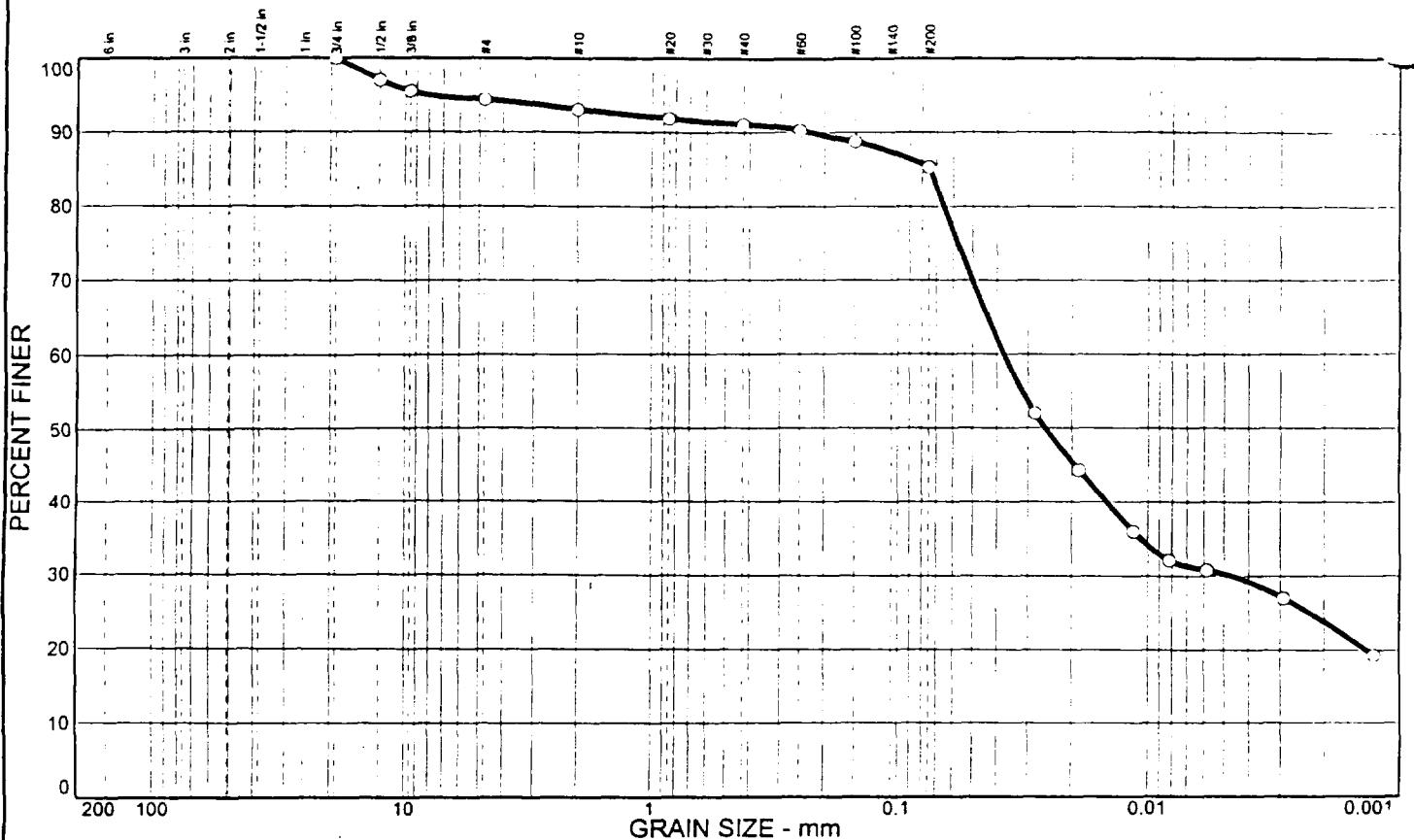
85= 0.07 D60= 0.04 D50= 0.02

30= 0.01



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	5.6	9.1	55.0	30.3	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.75	100.0			#4	94.4			○ SILT, LITTLE SAND
.5	97.0			#10	93.1			
.375	95.5			#20	91.9			
				#40	91.1			
				#60	90.3			
				#100	88.8			
				#200	85.3			
GRAIN SIZE								
D ₆₀	0.0374							
D ₃₀	0.0047							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-10

Sample No.: FASED-CSF-S29W-0-10"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC.
	Project: SOLUTIA SAUGET AREA I PROJECT
	Project No.: 1999-00-0774
	267A-279

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-10

ample No.: FASED-CSF-S29W-0-10"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

by sample and tare= 139.98

tare = 0.00

by sample weight = 139.98

ample split on number 10 sieve

plit sample data:

Sample and tare = 72.52 Tare = .00 Sample weight = 72.52

cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.75 inch	0.00	100.0
.5 inch	4.15	97.0
.375 inch	6.32	95.5
# 4	7.86	94.4
# 10	9.61	93.1
# 20	0.91	91.9
# 40	1.53	91.1
# 60	2.15	90.3
# 100	3.34	88.8
# 200	6.08	85.3

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 93.1

ight of hydrometer sample: 72.52

lculated biased weight= 77.89

ble of composite correction values:

Temp, deg C: 19.5 21.0

Comp. corr: -8.0 -8.0

scus correction only= 0

ific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

267A-280

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.6	48.5	40.5	0.0137	48.5	8.3	0.0280	52.0
5.00	19.6	42.5	34.5	0.0137	42.5	9.3	0.0187	44.3
15.00	19.8	36.0	28.0	0.0137	36.0	10.4	0.0114	36.0
30.00	20.0	33.0	25.0	0.0136	33.0	10.9	0.0082	32.1
60.00	20.4	32.0	24.0	0.0136	32.0	11.0	0.0058	30.8
250.00	20.7	29.0	21.0	0.0135	29.0	11.5	0.0029	27.0
1440.00	20.7	23.0	15.0	0.0135	23.0	12.5	0.0013	19.3

Fractional Components

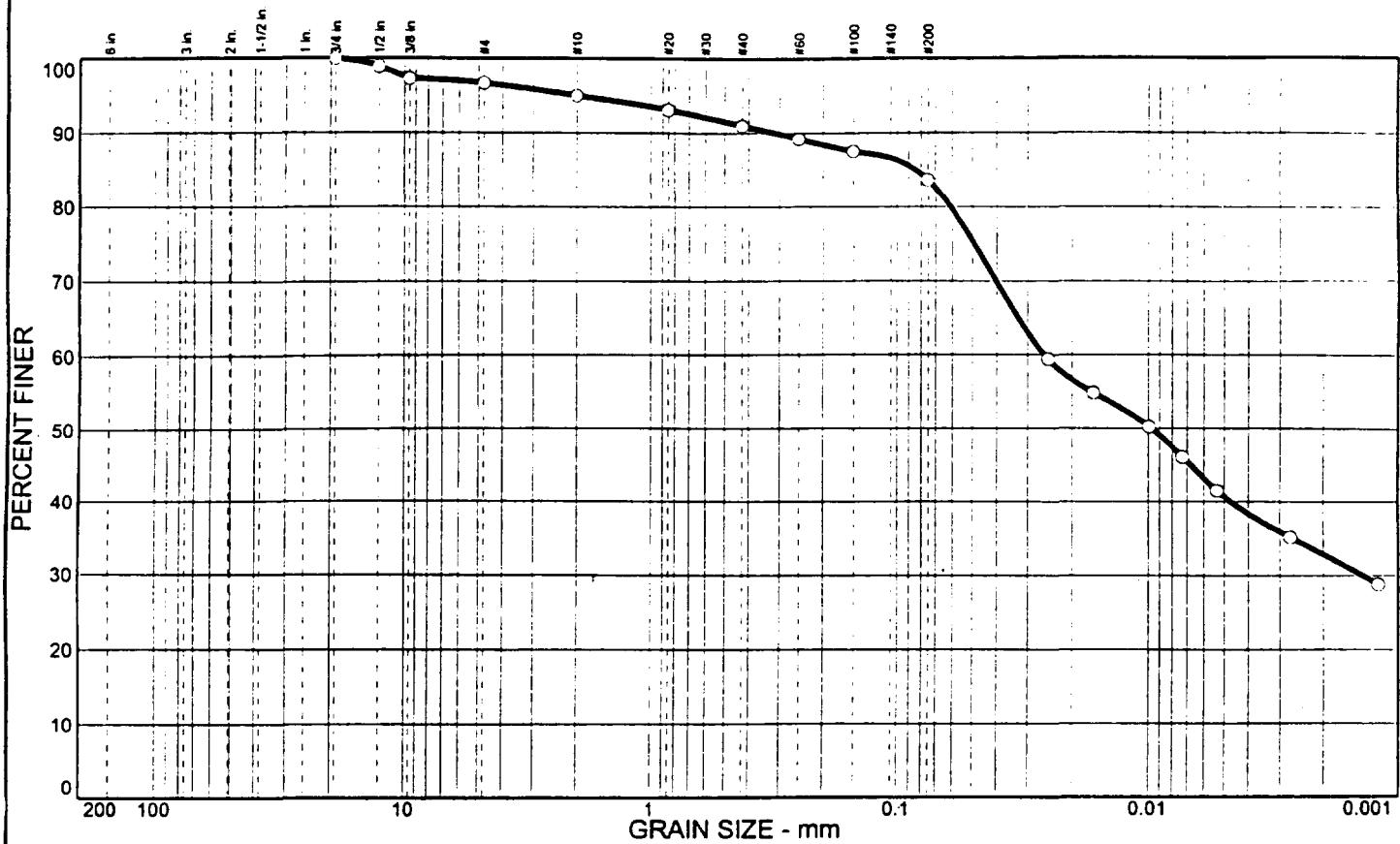
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 5.6 (% coarse = % fine = 5.6)
SAND = 9.1 (% coarse = 1.3 % medium = 2.0 % fine = 5.8)
SILT = 55.0 % CLAY = 30.3

85= 0.07 D₆₀= 0.04 D₅₀= 0.03
30= 0.00

[Signature]
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	3.3	13.1	42.9	40.7	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.75	100.0		
.5	98.9		
.375	97.3		
GRANULARITY			
D ₆₀	0.0257		
D ₃₀	0.0014		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-10

SIEVE number size	PERCENT FINER		
	○		
#4	96.7		
#10	95.0		
#20	93.1		
#40	91.0		
#60	89.2		
#100	87.5		
#200	83.6		

SOIL DESCRIPTION
○ SILT, WITH SAND
REMARKS:
○

Sample No.: FASED-CSF-S30N-0-8"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-282

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Ent: O'BRIEN & GERE ENGINEERS, INC.
ject: SOUTIA SAUGET AREA 1 PROJECT
roject Number: 1999-00-0774

Sample Data

ource: COC-10
ample No.: FASED-CSF-S30N-0-8"

lev. or Depth: Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - - Plastic Limit: - - -

SCS Classification: - - - AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 194.99

are = 0.00

ry sample weight = 194.99

ample split on number 10 sieve

plit sample data:

Sample and tare = 82.39 Tare = .00 Sample weight = 82.39

mulative weight retained tare= .00

.00 for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer

.75 inch	0.00	100.0
----------	------	-------

.5 inch	2.10	98.9
---------	------	------

.375 inch	5.23	97.3
-----------	------	------

# 4	6.52	96.7
-----	------	------

# 10	9.73	95.0
------	------	------

# 20	1.69	93.1
------	------	------

# 40	3.46	91.0
------	------	------

# 60	5.00	89.2
------	------	------

# 100	6.50	87.5
-------	------	------

# 200	9.85	83.6
-------	------	------

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 95.0

ight of hydrometer sample: 82.39

lculated biased weight= 86.73

able of composite correction values:

Temp, deg C: 19.0 20.5

Comp. corr: -8.0 -8.0

scus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.6	59.5	51.5	0.0137	59.5	6.5	0.0248	59.4
5.00	19.6	55.5	47.5	0.0137	55.5	7.2	0.0164	54.8
15.00	19.7	51.5	43.5	0.0137	51.5	7.8	0.0099	50.2
30.00	19.6	48.0	40.0	0.0137	48.0	8.4	0.0073	46.1
60.00	19.9	44.0	36.0	0.0137	44.0	9.1	0.0053	41.5
250.00	20.5	38.5	30.5	0.0136	38.5	10.0	0.0027	35.2
1440.00	19.1	33.0	25.0	0.0138	33.0	10.9	0.0012	28.8

Fractional Components

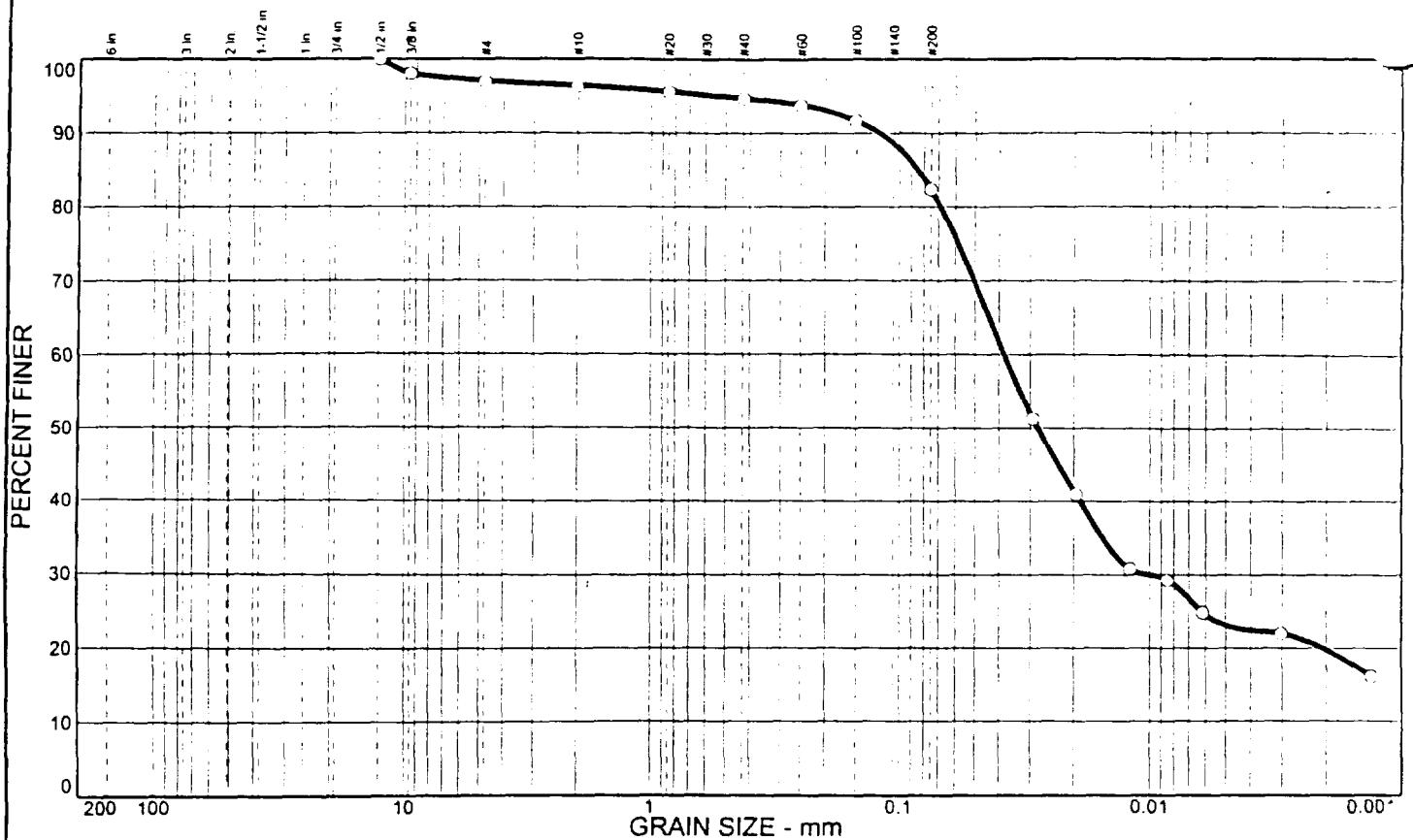
ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 3.3 (% coarse = % fine = 3.3)
SAND = 13.1 (% coarse = 1.7 % medium = 4.0 % fine = 7.4)
SILT = 42.9 % CLAY = 40.7

35= 0.08 D60= 0.03 D50= 0.01
30= 0.00

J. C. L.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	3.0	14.6	59.3	23.1	---	---	---	---

SIEVE inches size	PERCENT FINER			SOIL DESCRIPTION
	○			
.375	100.0 98.0			○ SILT, LITTLE SAND
GRAIN SIZE				
D ₆₀	0.0381			
D ₃₀	0.0100			
D ₁₀				
COEFFICIENTS				
C _c				
C _u				

○ Source: COC-4

Sample No.: FASED-CSF-S31N-0-13'

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-285

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-4

ample No.: FASED-CSF-S31N-0-13'

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, LITTLE SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 173.44

are = 0.00

ry sample weight = 173.44

ample split on number 10 sieve

plit sample data:

Sample and tare = 65.78 Tare = .00 Sample weight = 65.78

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	3.45	98.0
# 4	5.19	97.0
# 10	6.28	96.4
# 20	0.56	95.6
# 40	1.19	94.7
# 60	1.80	93.8
# 100	3.20	91.7
# 200	9.54	82.4

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 96.4

eight of hydrometer sample: 65.78

calculated biased weight= 68.24

able of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

ific gravity of solids= 2.65

ific gravity correction factor= 1.000

utrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	43.0	35.0	0.0136	43.0	9.2	0.0293	51.3
5.00	20.2	36.0	28.0	0.0136	36.0	10.4	0.0196	41.0
15.00	20.2	29.0	21.0	0.0136	29.0	11.5	0.0119	30.8
30.00	20.2	28.0	20.0	0.0136	28.0	11.7	0.0085	29.3
60.00	20.2	25.0	17.0	0.0136	25.0	12.2	0.0061	24.9
250.00	20.9	23.0	15.0	0.0135	23.0	12.5	0.0030	22.0
1440.00	19.1	19.0	11.0	0.0138	19.0	13.2	0.0013	16.1

Fractional Components

ravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL = 3.0 (% coarse = % fine = 3.0)

SAND = 14.6 (% coarse = 0.6 % medium = 1.7 % fine = 12.3)

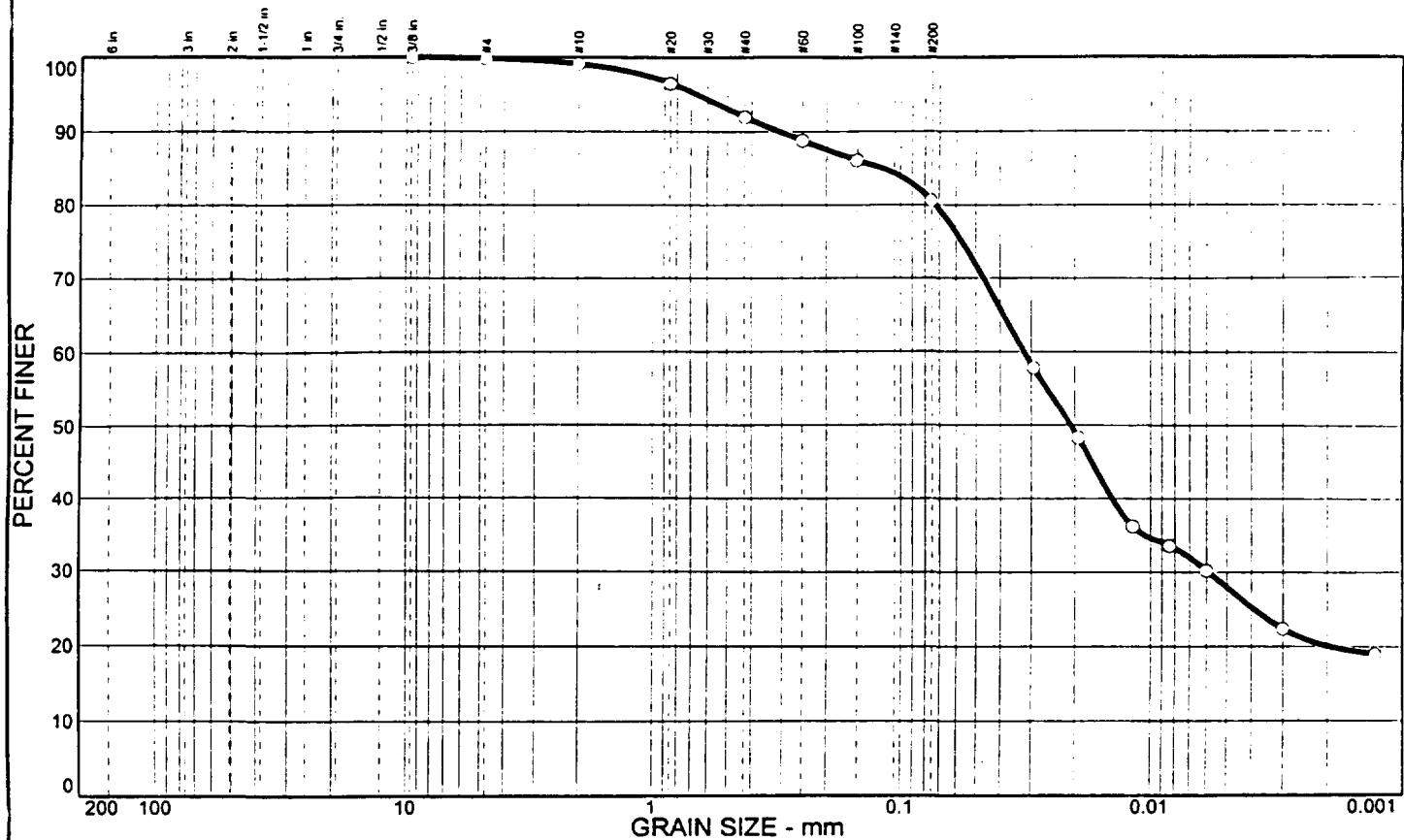
SILT = 59.3 % CLAY = 23.1

85= 0.08 D60= 0.04 D50= 0.03

30= 0.01

Jerry
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
O	0.2	19.2	52.6	28.0	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	O				O			
.375	100.0			#4	99.8			O SILT, WITH SAND
				#10	99.1			
				#20	96.5			
				#40	92.0			
				#60	88.8			
				#100	86.1			
				#200	80.6			
GRAIN SIZE								
D ₆₀	0.0320							
D ₃₀	0.0059							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								
REMARKS:								
O								

Source: COC-6

Sample No.: FASED-CSF-S32S-0-11"

Thompson Engineering	Client: O'BRIEN & GERE ENGINEERS, INC. Project: SOLUTIA SAUGET AREA 1 PROJECT		
	Project No.: 1999-00-0774	267A-288	Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
roject Number: 1999-00-0774

Sample Data

ource: COC-6
ample No.: FASED-CSF-S32S-0-11"
lev. or Depth: Sample Length (in./cm.):
ocation:
escription: SILT, WITH SAND
iquid Limit: - - - Plastic Limit: - - -
SCS Classification: - - - AASHTO Classification: - - -
esting Remarks:

Mechanical Analysis Data

Initial
ry sample and tare= 129.50
are = 0.00
ry sample weight = 129.50
ample split on number 10 sieve
plit sample data:
Sample and tare = 57.44 Tare = .00 Sample weight = 57.44
Cumulative weight retained tare= .00
for cumulative weight retained=.00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.23	99.8
# 10	1.18	99.1
# 20	1.49	96.5
# 40	4.10	92.0
# 60	5.99	88.8
# 100	7.54	86.1
# 200	10.70	80.6

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 99.1
eight of hydrometer sample: 57.44
alculated biased weight= 57.96
able of composite correction values:
Temp, deg C: 21.0 19.5
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
ific gravity correction factor= 1.000
rometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.2	41.5	33.5	0.0134	41.5	9.5	0.0293	57.8
5.00	21.1	36.0	28.0	0.0135	36.0	10.4	0.0194	48.3
15.00	21.4	29.0	21.0	0.0134	29.0	11.5	0.0118	36.2
30.00	21.6	27.5	19.5	0.0134	27.5	11.8	0.0084	33.6
60.00	21.8	25.5	17.5	0.0133	25.5	12.1	0.0060	30.2
250.00	22.5	21.0	13.0	0.0132	21.0	12.9	0.0030	22.4
1440.00	21.1	19.0	11.0	0.0135	19.0	13.2	0.0013	19.0

Fractional Components

Gravel/Sand based on #4
and/Fines based on #200

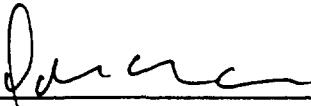
COBBLES = % GRAVEL = 0.2 (% coarse = % fine = 0.2)

SAND = 19.2 (% coarse = 0.7 % medium = 7.1 % fine = 11.4)

SILT = 52.6 % CLAY = 28.0

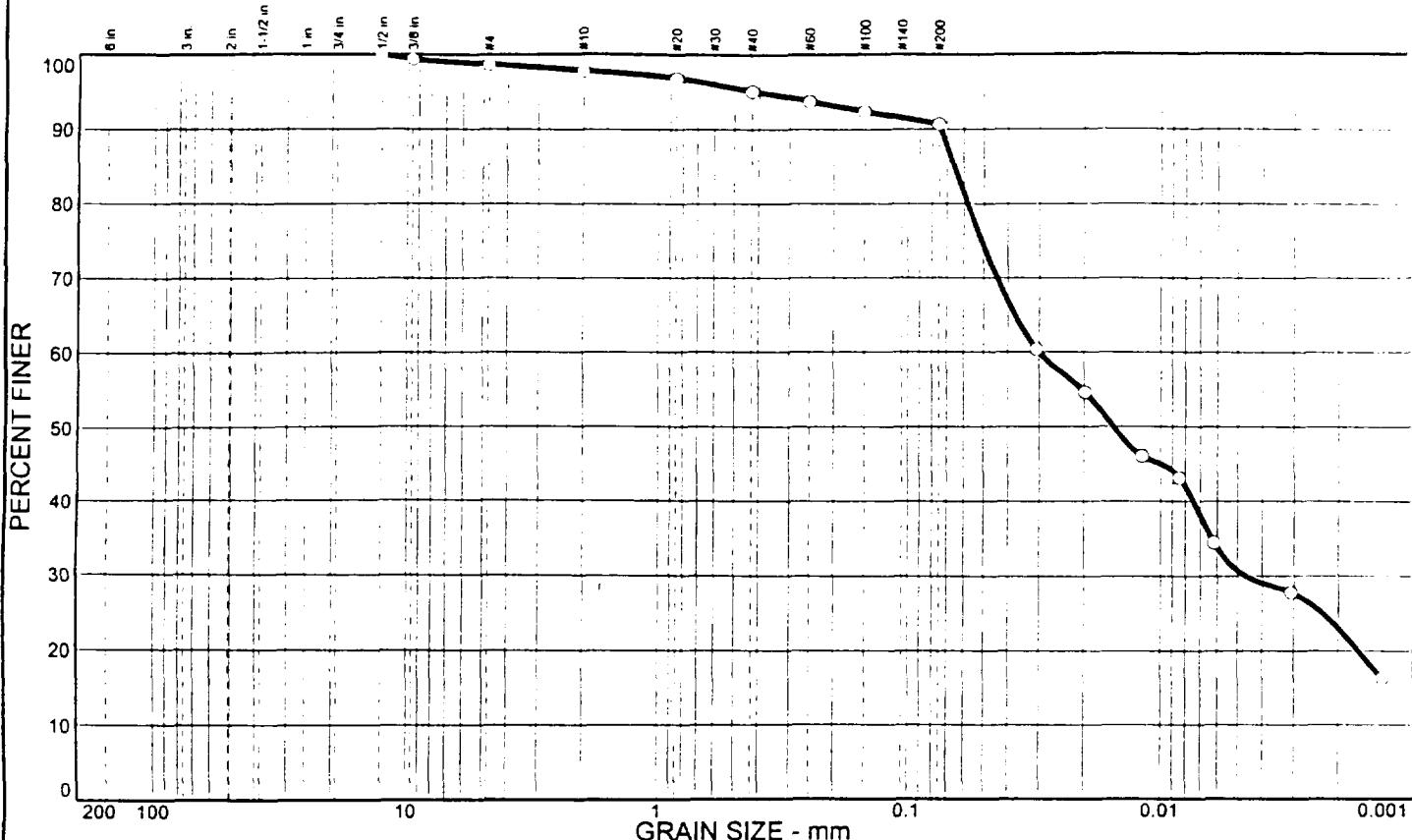
85= 0.12 D60= 0.03 D50= 0.02

30= 0.01



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.3	8.0	59.9	30.8	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
.375	100.0 99.4			#4 #10 #20 #40 #60 #100 #200	98.7 97.8 96.8 95.1 93.7 92.4 90.7			○ SILT, TRACE SAND
<hr/>								
GRAN SIZE		REMARKS.						
D ₆₀	0.0299	○						
D ₃₀	0.0046							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-8

Sample No.: FASED-CSF-S33-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-291

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-8

Sample No.: FASED-CSF-S33-0-13"

Level or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, TRACE SAND

Liquid Limit: - - -

Plastic Limit: - - -

AASHTO Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Weight sample and tare= 121.08

Tare = 0.00

Weight sample weight = 121.08

Sample split on number 10 sieve

Cumulative sample data:

Sample and tare = 51.03 Tare = .00 Sample weight = 51.03

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	0.68	99.4
# 4	1.58	98.7
# 10	2.62	97.8
# 20	0.52	96.8
# 40	1.41	95.1
# 60	2.15	93.7
# 100	2.80	92.4
# 200	3.69	90.7

Hydrometer Analysis Data

Preparation sieve is #10

Percent -#10 based upon complete sample= 97.8

Weight of hydrometer sample: 51.03

Calculated biased weight= 52.18

Table of composite correction values:

Temp, deg C: 20.0 18.0

Comp. corr: -8.0 -8.0

Discus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.0	39.5	31.5	0.0138	39.5	9.8	0.0306	60.4
5.00	19.1	36.5	28.5	0.0138	36.5	10.3	0.0198	54.6
15.00	19.3	32.0	24.0	0.0138	32.0	11.0	0.0118	46.0
30.00	19.3	30.5	22.5	0.0138	30.5	11.3	0.0084	43.1
60.00	19.4	26.0	18.0	0.0137	26.0	12.0	0.0062	34.5
250.00	19.6	22.5	14.5	0.0137	22.5	12.6	0.0031	27.8
1440.00	19.7	16.5	8.5	0.0137	16.5	13.6	0.0013	16.3

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

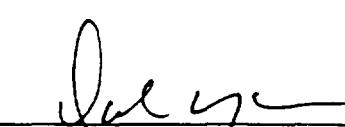
COBBLES = % GRAVEL = 1.3 (% coarse = % fine = 1.3)

SAND = 8.0 (% coarse = 0.9 % medium = 2.7 % fine = 4.4)

SILT = 59.9 % CLAY = 30.8

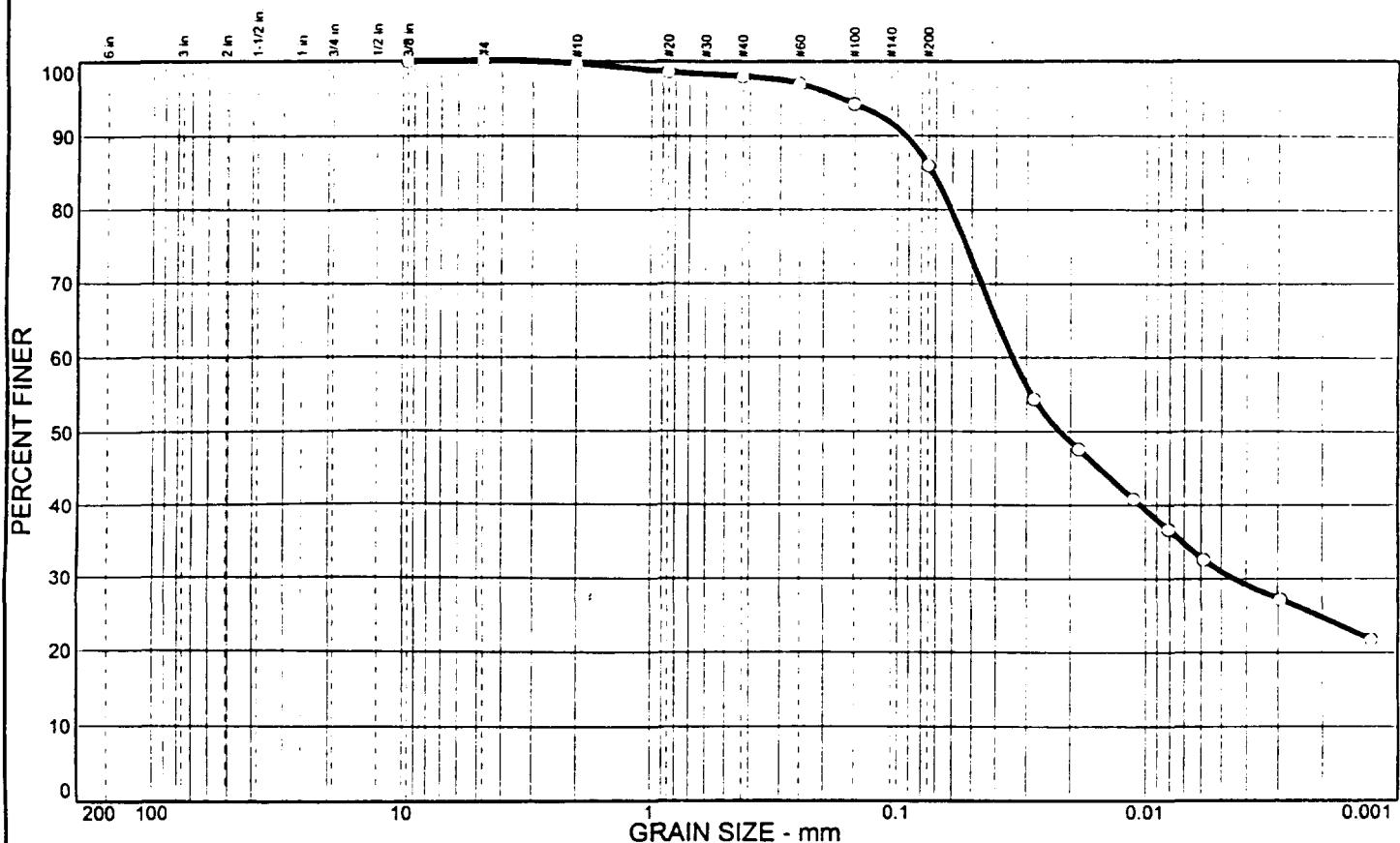
D₃₅ = 0.07 D₆₀ = 0.03 D₅₀ = 0.02

D₀ = 0.00



MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		14.0	55.0	31.0	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0341		
D ₃₀	0.0044		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	100.0		
#10	99.7		
#20	98.6		
#40	98.0		
#60	97.0		
#100	94.3		
#200	86.0		

SOIL DESCRIPTION
○ SILT, LITTLE SAND

REMARKS:
○

○ Source: COC-4

Sample No.: FASED-CSF-S34S-0-14"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-294

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-4

Sample No.: FASED-CSF-S34S-0-14"

lev. or Depth:

Sample Length (in./cm.):

Location:

Description: SILT, LITTLE SAND

Liquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare= 217.19

tare = 0.00

dry sample weight = 217.19

sample split on number 10 sieve

split sample data:

Sample and tare = 73.33 Tare = .00 Sample weight = 73.33

Cumulative weight retained tare= .00

> for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	0.00	100.0
# 10	0.57	99.7
# 20	0.80	98.6
# 40	1.25	98.0
# 60	1.98	97.0
# 100	4.00	94.3
# 200	10.08	86.0

Hydrometer Analysis Data

Separation sieve is #10

Percent -#10 based upon complete sample= 99.7

Weight of hydrometer sample: 73.33

Calculated biased weight= 73.55

Table of composite correction values:

Temp, deg C: 21.0 18.0

Comp. corr: -8.0 -8.0

Eniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	48.0	40.0	0.0136	48.0	8.4	0.0279	54.4
5.00	20.2	43.0	35.0	0.0136	43.0	9.2	0.0185	47.6
15.00	20.2	38.0	30.0	0.0136	38.0	10.1	0.0111	40.8
30.00	20.2	35.0	27.0	0.0136	35.0	10.6	0.0081	36.7
60.00	20.2	32.0	24.0	0.0136	32.0	11.0	0.0058	32.6
250.00	20.9	28.0	20.0	0.0135	28.0	11.7	0.0029	27.2
1440.00	19.2	24.0	16.0	0.0138	24.0	12.4	0.0013	21.8

Fractional Components

ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 14.0 (% coarse = 0.3 % medium = 1.7 % fine = 12.0)

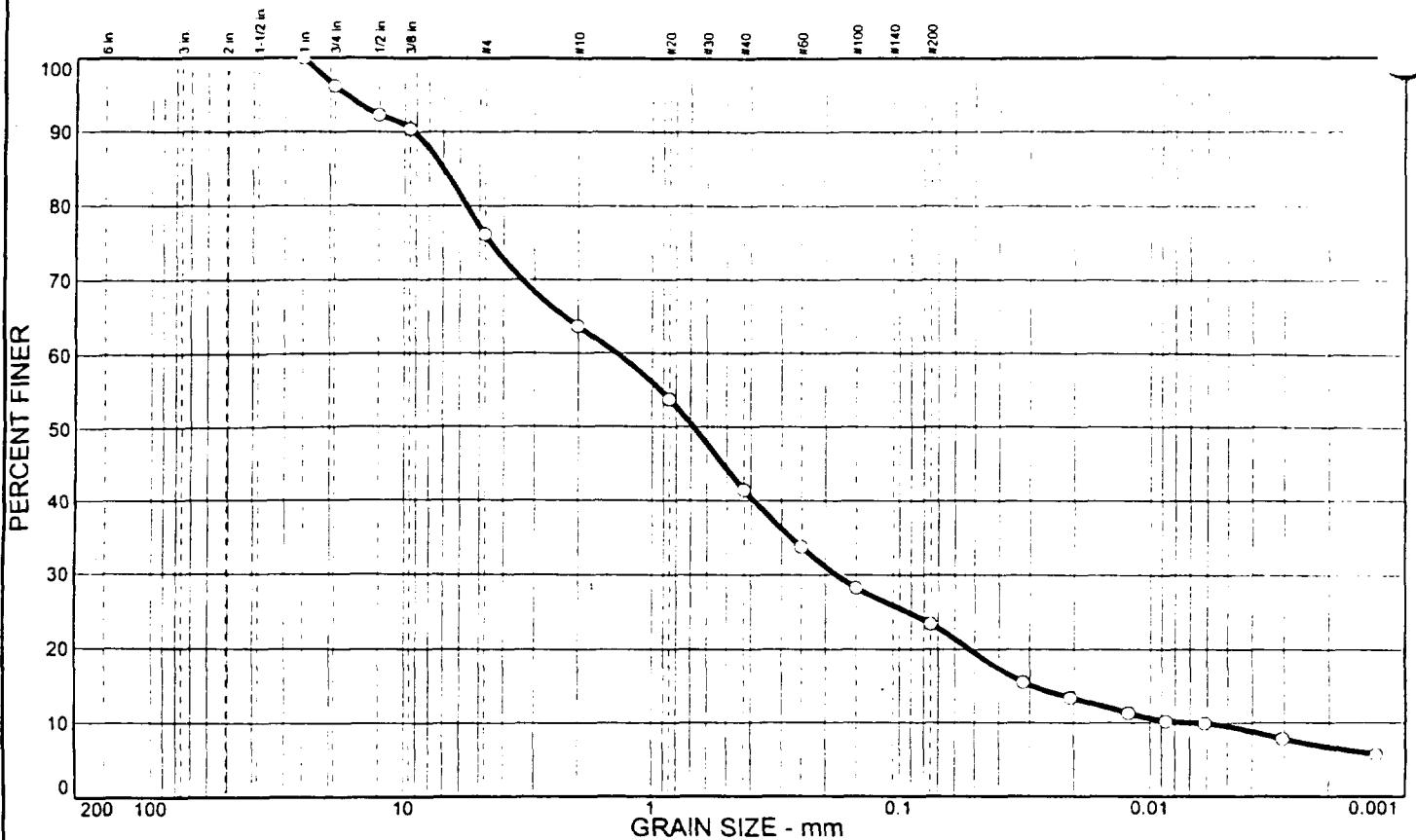
SILT = 55.0 % CLAY = 31.0

85= 0.07 D60= 0.03 D50= 0.02

30= 0.00

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MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	23.9	52.6	14.0	9.5	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
1	100.0		
.75	96.2		
.5	92.3		
.375	90.4		

GRAIN SIZE			
D ₆₀	D ₃₀	D ₁₀	
1.40	0.180	0.0069	

COEFFICIENTS			
C _c	C _u		
3.34	201.17		

SIEVE number size	PERCENT FINER		
	○		
#4	76.1		
#10	63.7		
#20	53.7		
#40	41.5		
#60	33.8		
#100	28.3		
#200	23.5		

SOIL DESCRIPTION
○ SILTY COARSE TO FINE SAND, WITH LIMESTONE

REMARKS:

○ Source: COC-3

Sample No.: FASED-CSF-S35S-0-21"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-297

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOLUTIA SAUGET AREA 1 PROJECT

ect Number: 1999-00-0774

Sample Data

ource: COC-3

ample No.: FASED-CSF-S35S-0-21"

ev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILTY COARSE TO FINE SAND, WITH LIMESTONE

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 254.38

re = 0.00

ry sample weight = 254.38

ample split on number 10 sieve

plit sample data:

Sample and tare = 90.21 Tare = .00 Sample weight = 90.21

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
1 inch	0.00	100.0
.75 inch	9.65	96.2
.5 inch	19.55	92.3
.375 inch	24.43	90.4
# 4	60.74	76.1
# 10	92.28	63.7
# 20	14.13	53.7
# 40	31.39	41.5
# 60	42.36	33.8
# 100	50.14	28.3
# 200	57.00	23.5

Hydrometer Analysis Data

paration sieve is #10

rcent -#10 based upon complete sample= 63.7

ight of hydrometer sample: 90.21

lculated biased weight= 141.62

ble of composite correction values:

Temp, deg C: 21.0 23.0

Comp. corr: -8.0 -8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

267A-298

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	21.4	30.0	22.0	0.0134	30.0	11.4	0.0320	15.5
5.00	21.4	27.0	19.0	0.0134	27.0	11.9	0.0207	13.4
15.00	21.4	24.0	16.0	0.0134	24.0	12.4	0.0122	11.3
30.00	21.8	22.5	14.5	0.0133	22.5	12.6	0.0087	10.2
60.00	22.1	22.0	14.0	0.0133	22.0	12.7	0.0061	9.9
250.00	22.7	19.0	11.0	0.0132	19.0	13.2	0.0030	7.8
1440.00	21.1	16.0	8.0	0.0135	16.0	13.7	0.0013	5.7

Fractional Components

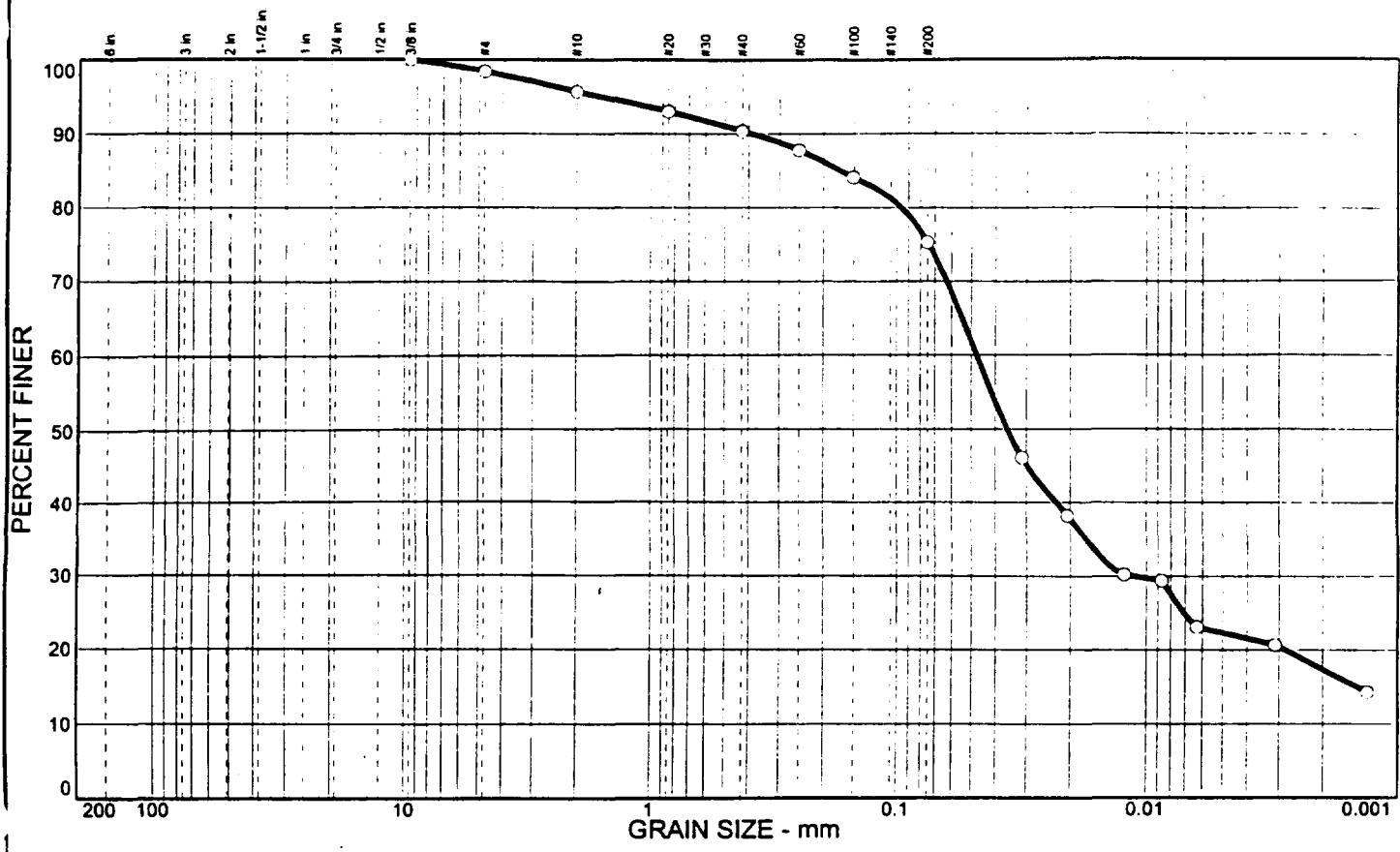
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 23.9 (% coarse = 3.8 % fine = 20.1)
 SAND = 52.6 (% coarse = 12.4 % medium = 22.2 % fine = 18.0)
 SILT = 14.0 % CLAY = 9.5

85= 6.98 D₆₀= 1.40 D₅₀= 0.68
 30= 0.18 D₁₅= 0.03 D₁₀= 0.01
 c= 3.3439 C_u= 201.1743

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.6	23.1	53.0	22.3	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0475		
D ₃₀	0.0112		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	98.4		
#10	95.7		
#20	93.0		
#40	90.4		
#60	87.8		
#100	84.1		
#200	75.3		

SOIL DESCRIPTION
○ SILT, WITH SAND
REMARKS:
○

○ Source: COC-8

Sample No.: FASED-CSF-S36N-0-12"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-300

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.

ect: SOUTIA SAUGET AREA 1 PROJECT

ject Number: 1999-00-0774

Sample Data

ource: COC-8

ample No.: FASED-CSF-S36N-0-12"

lev. or Depth:

Sample Length (in./cm.):

ocation:

escription: SILT, WITH SAND

iquid Limit: - - -

Plastic Limit: - - -

SCS Classification: - - -

AASHTO Classification: - - -

esting Remarks:

Mechanical Analysis Data

Initial

ry sample and tare= 206.56

are = 0.00

ry sample weight = 206.56

ample split on number 10 sieve

plit sample data:

Sample and tare = 60.16 Tare = .00 Sample weight = 60.16

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
-------	------------------------	------------------

.375 inch	0.00	100.0
# 4	3.33	98.4
# 10	8.91	95.7
# 20	1.71	93.0
# 40	3.35	90.4
# 60	4.97	87.8
# 100	7.31	84.1
# 200	12.82	75.3

Hydrometer Analysis Data

eparation sieve is #10

ercent -#10 based upon complete sample= 95.7

eight of hydrometer sample: 60.16

alculated biased weight= 62.86

able of composite correction values:

Temp, deg C: 20.0 18.0

Comp. corr: -8.0 -8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

ific gravity correction factor= 1.000

rometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	19.2	37.0	29.0	0.0138	37.0	10.2	0.0312	46.1
5.00	19.2	32.0	24.0	0.0138	32.0	11.0	0.0205	38.2
15.00	19.3	27.0	19.0	0.0138	27.0	11.9	0.0122	30.2
30.00	19.4	26.5	18.5	0.0137	26.5	11.9	0.0087	29.4
60.00	19.5	22.5	14.5	0.0137	22.5	12.6	0.0063	23.1
250.00	19.9	21.0	13.0	0.0137	21.0	12.9	0.0031	20.7
1440.00	19.7	17.0	9.0	0.0137	17.0	13.5	0.0013	14.3

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 1.6 (% coarse = % fine = 1.6)

SAND = 23.1 (% coarse = 2.7 % medium = 5.3 % fine = 15.1)

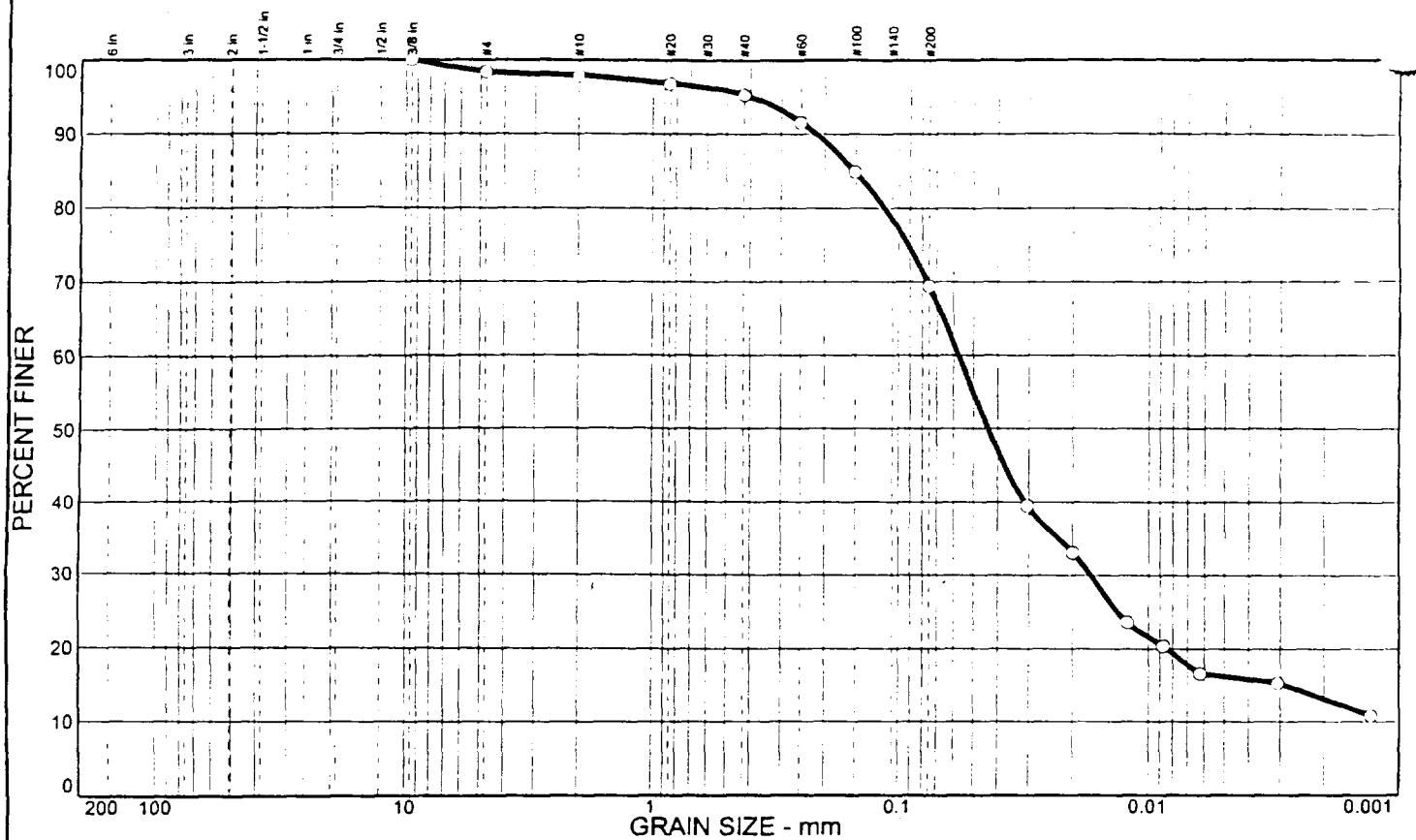
SILT = 53.0 % CLAY = 22.3

D₃₅ = 0.17 D₆₀ = 0.05 D₅₀ = 0.04

D₁₀ = 0.01 D₁₅ = 0.00

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	1.6	29.0	53.2	16.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRANULARITY			
D ₆₀	0.0573		
D ₃₀	0.0170		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

○ Source: COC-10

SIEVE number size	PERCENT FINER		
	○		
#4	98.4		
#10	97.9		
#20	96.8		
#40	95.3		
#60	91.6		
#100	84.9		
#200	69.4		

SOIL DESCRIPTION
 ○ FINE SANDY SILT

REMARKS:
 ○

Sample No.: FASED-CSF-S37N-0-13"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
 Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-303

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOUTIA SAUGET AREA 1 PROJECT

Project Number: 1999-00-0774

Sample Data

Source: COC-10

Sample No.: FASED-CSF-S37N-0-13"

Level or Depth:

Sample Length (in./cm.):

Location:

Description: FINE SANDY SILT

Liquid Limit: - - -

Plastic Limit: - - -

AASHTO Classification: - - -

AASHTO Classification: - - -

Testing Remarks:

Mechanical Analysis Data

Initial

Weight sample and tare= 133.28

Tare = 0.00

Weight sample weight = 133.28

Sample split on number 10 sieve

Split sample data:

Sample and tare = 76.81 Tare = .00 Sample weight = 76.81

Cumulative weight retained tare= .00

for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.375 inch	0.00	100.0
# 4	2.14	98.4
# 10	2.76	97.9
# 20	0.89	96.8
# 40	2.07	95.3
# 60	4.92	91.6
# 100	10.24	84.9
# 200	22.36	69.4

Hydrometer Analysis Data

Preparation sieve is #10

Percent -#10 based upon complete sample= 97.9

Weight of hydrometer sample: 76.81

Calculated biased weight= 78.46

Table of composite correction values:

Temp, deg C: 20.0 21.5

Comp. corr: -8.0 -8.0

Nuisance correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Hydrometer type: 152H

Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.1	39.0	31.0	0.0136	39.0	9.9	0.0303	39.5
5.00	20.1	34.0	26.0	0.0136	34.0	10.7	0.0200	33.1
15.00	20.3	26.5	18.5	0.0136	26.5	11.9	0.0121	23.6
30.00	20.5	24.0	16.0	0.0136	24.0	12.4	0.0087	20.4
60.00	21.1	21.0	13.0	0.0135	21.0	12.9	0.0062	16.6
250.00	21.3	20.0	12.0	0.0134	20.0	13.0	0.0031	15.3
1440.00	21.5	16.5	8.5	0.0134	16.5	13.6	0.0013	10.8

Fractional Components

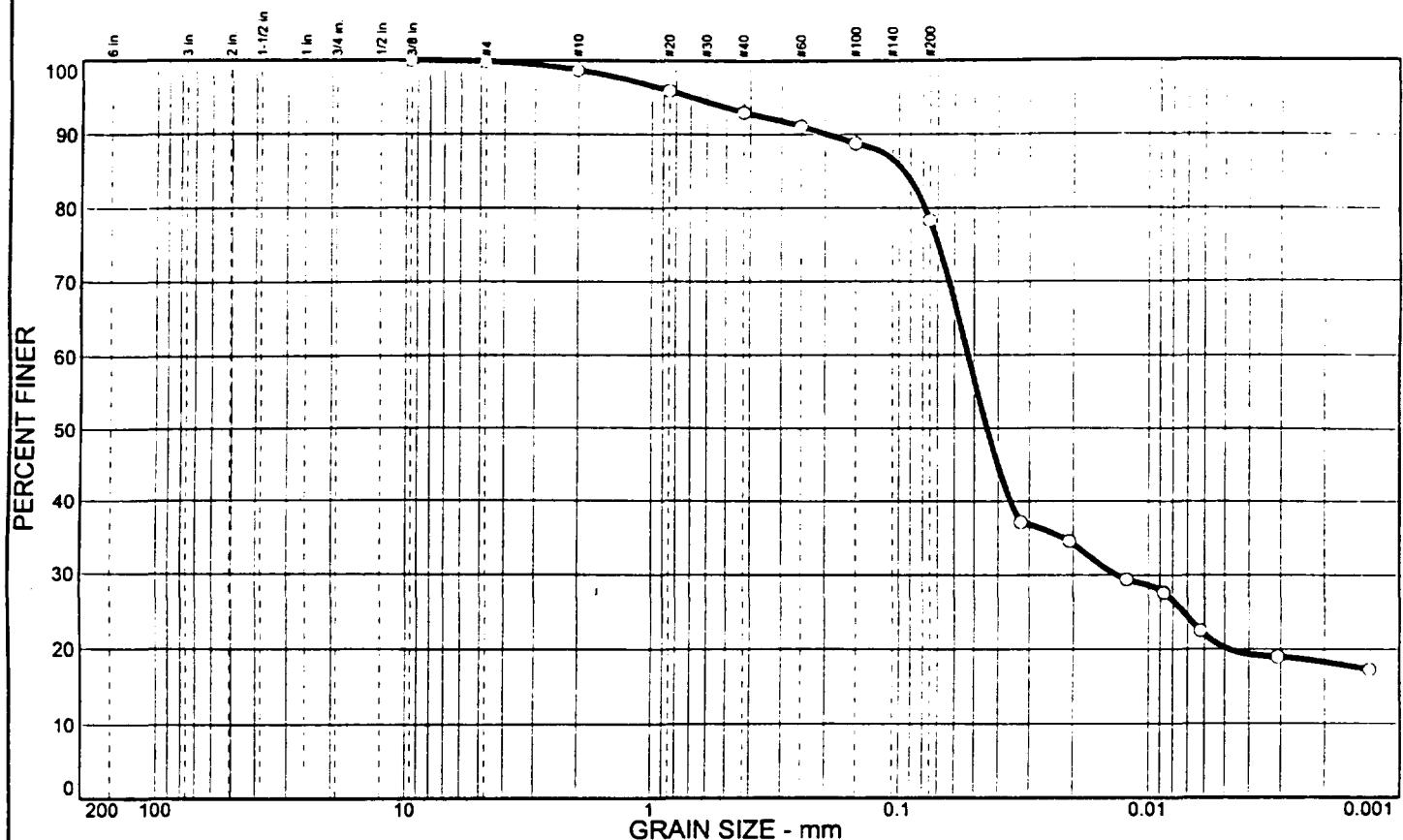
Gravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL = 1.6 (% coarse = % fine = 1.6)
 SAND = 29.0 (% coarse = 0.5 % medium = 2.6 % fine = 25.9)
 SILT = 53.2 % CLAY = 16.2

85= 0.15 D60= 0.06 D50= 0.04
 30= 0.02 D15= 0.00

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Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
0	0.2	21.5	58.1	20.2	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.375	100.0		
GRAIN SIZE			
D ₆₀	0.0527		
D ₃₀	0.0134		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
	○		
#4	99.8		
#10	98.7		
#20	95.9		
#40	93.0		
#60	91.1		
#100	88.8		
#200	78.3		

SOIL DESCRIPTION
○ SILT, WITH SAND

REMARKS:
○

○ Source: COC-7

Sample No.: FASED-CSF-S38S-0-14"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-306

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-7
Sample No.: FASED-CSF-S38S-0-14"
Level or Depth: Sample Length (in./cm.):
Location:
Description: SILT, WITH SAND
Liquid Limit: - - - Plastic Limit: - - -
CS Classification: - - - AASHTO Classification: - - -
String Remarks:

Mechanical Analysis Data

Initial

Weight sample and tare= 176.87
Tare = 0.00
Weight sample weight = 176.87
Sample split on number 10 sieve
Initial sample data:
Sample and tare = 57.13 Tare = .00 Sample weight = 57.13
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
.375 inch	0.00	100.0
# 4	0.33	99.8
# 10	2.36	98.7
# 20	1.61	95.9
# 40	3.32	93.0
# 60	4.42	91.1
# 100	5.74	88.8
# 200	11.79	78.3

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 98.7
Weight of hydrometer sample: 57.13
Calculated biased weight= 57.88
Table of composite correction values:
Temp, deg C: 20.5 22.0
Comp. corr: -8.0 -8.0

Nuisance correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.7	29.5	21.5	0.0135	29.5	11.5	0.0324	37.2
5.00	20.7	28.0	20.0	0.0135	28.0	11.7	0.0207	34.6
15.00	20.8	25.0	17.0	0.0135	25.0	12.2	0.0122	29.4
30.00	20.9	24.0	16.0	0.0135	24.0	12.4	0.0087	27.6
60.00	21.2	21.0	13.0	0.0134	21.0	12.9	0.0062	22.5
250.00	21.8	19.0	11.0	0.0133	19.0	13.2	0.0031	19.0
1400.00	21.1	18.0	10.0	0.0135	18.0	13.3	0.0013	17.3

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 0.2 (% coarse = % fine = 0.2)

SAND = 21.5 (% coarse = 1.1 % medium = 5.7 % fine = 14.7)

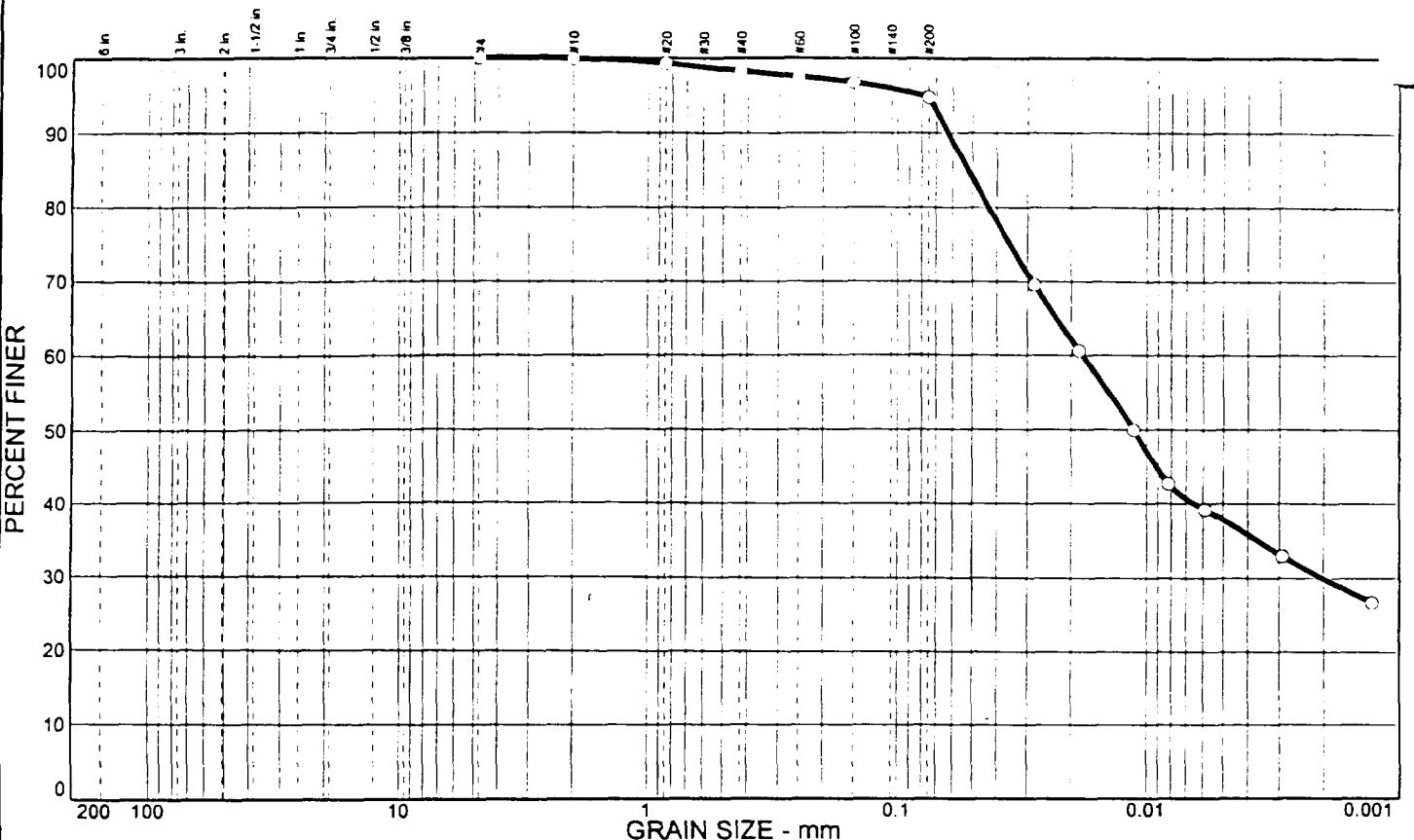
SILT = 58.1 % CLAY = 20.2

D₃₅ = 0.10 D₆₀ = 0.05 D₅₀ = 0.04

D₁₀ = 0.01

J. L. Lutz
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		5.2	56.9	37.9	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION
	○				○			
				#4	100.0			○ SILT, TRACE SAND
				#10	99.9			
				#20	99.3			
				#40	98.3			
				#60	97.5			
				#100	96.8			
				#200	94.8			
GRAIN SIZE								
D ₆₀	0.0180							
D ₃₀	0.0020							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								
○								
REMARKS:								
○								

○ Source: COC-1

Sample No.: FASED-CSF-S39S-0-26"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.

Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-309

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOUTIA SAUGET AREA 1 PROJECT
ect Number: 1999-00-0774

Sample Data

ource: COC-1
ample No.: FASED-CSF-S39S-0-26"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 104.46
re = 0.00
ry sample weight = 104.46
mple split on number 10 sieve
plit sample data:
Sample and tare = 56.09 Tare = .00 Sample weight = 56.09
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.16	99.9
# 20	0.35	99.3
# 40	0.90	98.3
# 60	1.33	97.5
# 100	1.73	96.8
# 200	2.84	94.8

Hydrometer Analysis Data

paration sieve is #10
rcent -#10 based upon complete sample= 99.9
ight of hydrometer sample: 56.09
lculated biased weight= 56.15
ble of composite correction values:
Temp, deg C: 19.5 22.0
Comp. corr: -8.0 -8.0

niscus correction only= 0
ecific gravity of solids= 2.65
ecific gravity correction factor= 1.000
yrometer type: 152H
ffective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.7	47.0	39.0	0.0135	47.0	8.6	0.0280	69.5
5.00	20.7	42.0	34.0	0.0135	42.0	9.4	0.0186	60.6
15.00	20.7	36.0	28.0	0.0135	36.0	10.4	0.0113	49.9
30.00	21.0	32.0	24.0	0.0135	32.0	11.0	0.0082	42.7
60.00	21.1	30.0	22.0	0.0135	30.0	11.4	0.0059	39.2
250.00	21.9	26.5	18.5	0.0133	26.5	11.9	0.0029	33.0
1440.00	19.2	23.0	15.0	0.0138	23.0	12.5	0.0013	26.7

Fractional Components

Ravel/Sand based on #4
and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 5.2 (% coarse = 0.1 % medium = 1.6 % fine = 3.5)

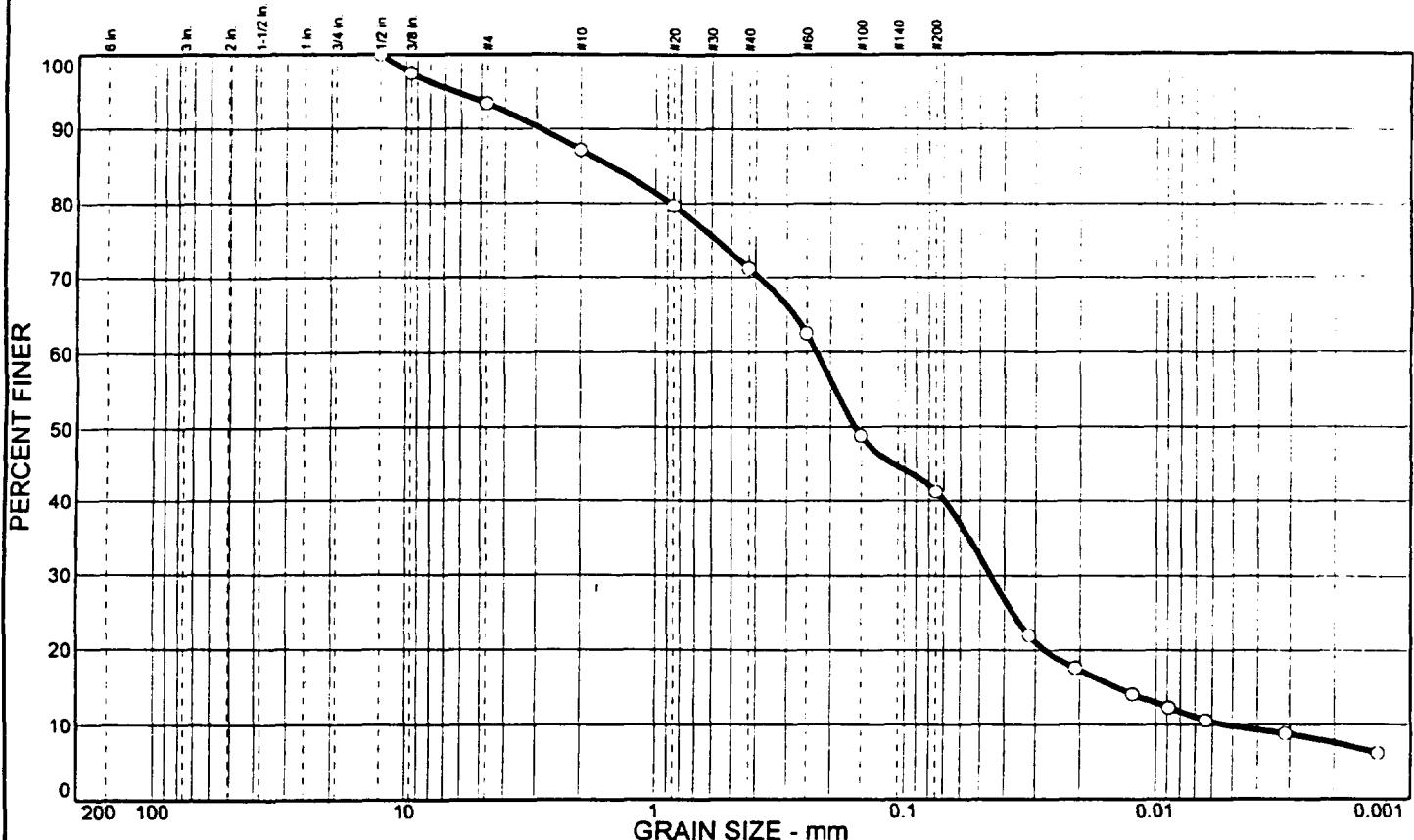
SILT = 56.9 % CLAY = 37.9

85= 0.05 D₆₀= 0.02 D₅₀= 0.01

30= 0.00

Joe J.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○	6.6	52.1	31.5	9.8	---	---	---	---

SIEVE inches size	PERCENT FINER		
	○		
.5	100.0		
.375	97.5		
GRANULARITY			
D ₆₀	0.227		
D ₃₀	0.0454		
D ₁₀	0.0054		
COEFFICIENTS			
C _c	1.69		
C _u	42.39		

SIEVE number size	PERCENT FINER		
	○		
#4	93.4		
#10	87.2		
#20	79.7		
#40	71.2		
#60	62.5		
#100	48.8		
#200	41.3		

SOIL DESCRIPTION:
 SILTY MEDIUM TO FINE SAND, TRACE GRAVEL

REMARKS:

○ Source: COC-4

Sample No.: FASED-CSF-S40-0-20"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA 1 PROJECT

Project No.: 1999-00-0774

267A-312

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Object Number: 1999-00-0774

Sample Data

Source: COC-4
Sample No.: FASED-CSF-S40-0-20"
Level or Depth: Sample Length (in./cm.):
Location:
Description: SILTY MEDIUM TO FINE SAND, TRACE GRAVEL
Liquid Limit: - - - Plastic Limit: - - -
ICS Classification: - - - AASHTO Classification: - - -
Testing Remarks:

Mechanical Analysis Data

Initial

dry sample and tare = 162.75
Tare = 0.00
dry sample weight = 162.75
sample split on number 10 sieve
listed sample data:
Sample and tare = 98.95 Tare = .00 Sample weight = 98.95
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt. retained	Percent finer
.5 inch	0.00	100.0
.375 inch	4.07	97.5
# 4	10.68	93.4
# 10	20.86	87.2
# 20	8.47	79.7
# 40	18.14	71.2
# 60	28.09	62.5
# 100	43.55	48.8
# 200	52.09	41.3

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 87.2
Weight of hydrometer sample: 98.95
Calculated biased weight= 113.47
Table of composite correction values:
Temp, deg C: 21.0 19.0
Comp. corr: -8.0 -8.0

Nuisance correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= $16.294964 - 0.164 \times R_m$

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	20.2	33.0	25.0	0.0136	33.0	10.9	0.0318	22.0
5.00	20.2	28.0	20.0	0.0136	28.0	11.7	0.0208	17.6
15.00	20.2	24.0	16.0	0.0136	24.0	12.4	0.0124	14.1
30.00	20.2	22.0	14.0	0.0136	22.0	12.7	0.0089	12.3
60.00	20.2	20.0	12.0	0.0136	20.0	13.0	0.0063	10.6
250.00	20.9	18.0	10.0	0.0135	18.0	13.3	0.0031	8.8
1440.00	19.6	15.0	7.0	0.0137	15.0	13.8	0.0013	6.2

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

COBBLES = % GRAVEL = 6.6 (% coarse = % fine = 6.6)

SAND = 52.1 (% coarse = 6.2 % medium = 16.0 % fine = 29.9)

SILT = 31.5 % CLAY = 9.8

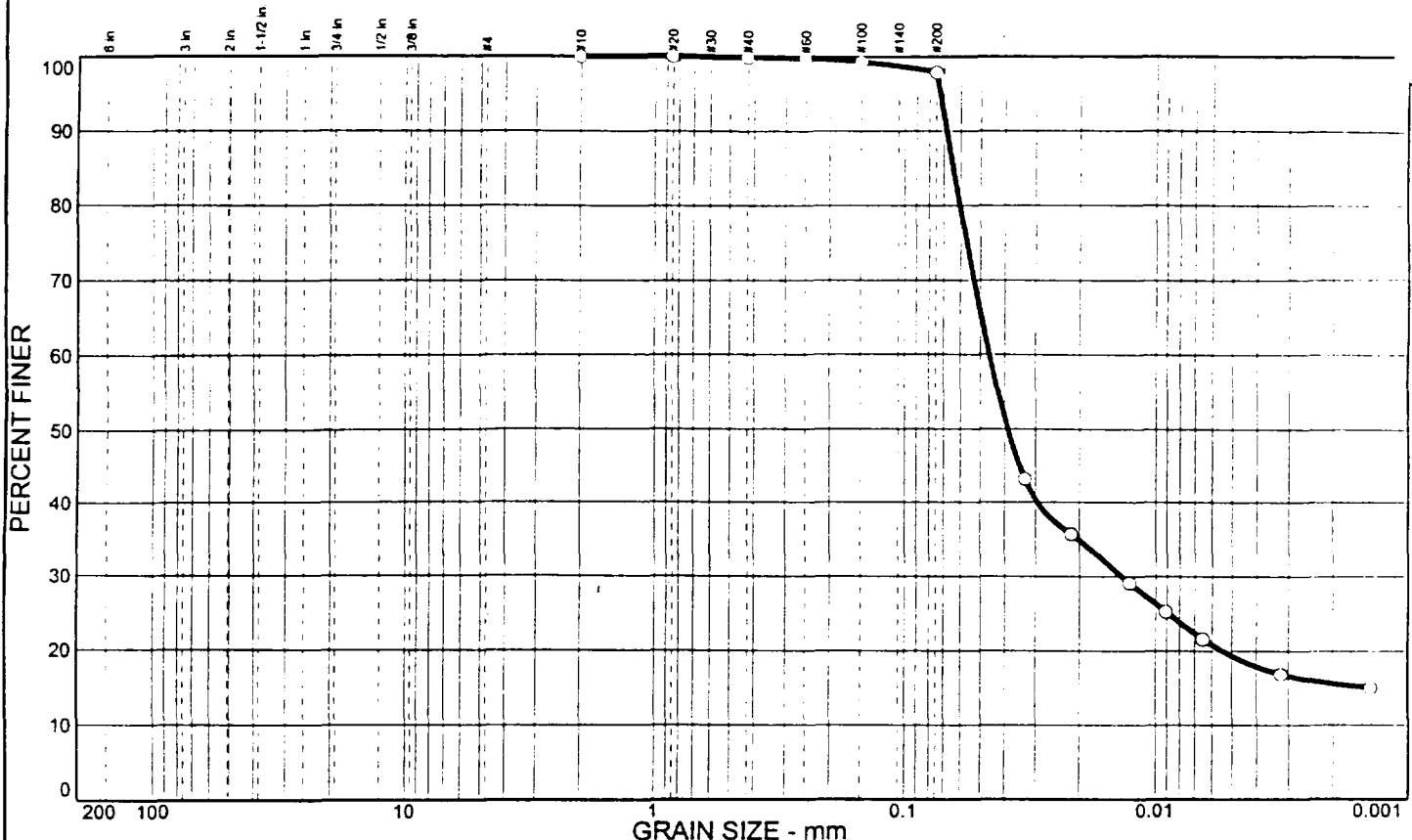
D₅= 1.51 D₆₀= 0.23 D₅₀= 0.16

D₁₀= 0.05 D₁₅= 0.01 D₁₀= 0.01

Cu= 1.6916 C_u= 42.3915

Jalay
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



GRAIN SIZE DISTRIBUTION TEST DATA

lient: O'BRIEN & GERE ENGINEERS, INC.
ect: SOLUTIA SAUGET AREA 1 PROJECT
ject Number: 1999-00-0774

Sample Data

ource: COC-6
ample No.: BSSED-PDC-US-N-0-20"
lev. or Depth:
ocation:
escription: SILT, TRACE SAND
iquid Limit: - - -
SCS Classification: - - -
esting Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

ry sample and tare= 174.72
are = 0.00
ry sample weight = 174.72
ample split on number 10 sieve
plit sample data:
Sample and tare = 53.27 Tare = .00 Sample weight = 53.27
Cumulative weight retained tare= .00
for cumulative weight retained= .00

Sieve	Cumul. Wt.	Percent
	retained	finer
# 10	0.00	100.0
# 20	0.00	100.0
# 40	0.03	99.9
# 60	0.11	99.8
# 100	0.35	99.3
# 200	1.12	97.9

Hydrometer Analysis Data

eparation sieve is #10
ercent -#10 based upon complete sample= 100.0
ight of hydrometer sample: 53.27
alculated biased weight= 53.27
able of composite correction values:
Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

eniscus correction only= 0
pecific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H
ffective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, Actual deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	31.0	23.0	0.0140	31.0	11.2	0.0330	43.2
5.00	18.2	27.0	19.0	0.0140	27.0	11.9	0.0215	35.7
15.00	18.3	23.5	15.5	0.0139	23.5	12.4	0.0127	29.1
30.00	18.3	21.5	13.5	0.0139	21.5	12.8	0.0091	25.3
60.00	18.6	19.5	11.5	0.0139	19.5	13.1	0.0065	21.6
250.00	19.5	17.0	9.0	0.0137	17.0	13.5	0.0032	16.9
1440.00	15.4	16.0	8.0	0.0145	16.0	13.7	0.0014	15.0

Fractional Components

ravel/Sand based on #4

and/Fines based on #200

COBBLES = % GRAVEL =

SAND = 2.1 (% coarse = % medium = 0.1 % fine = 2.0)

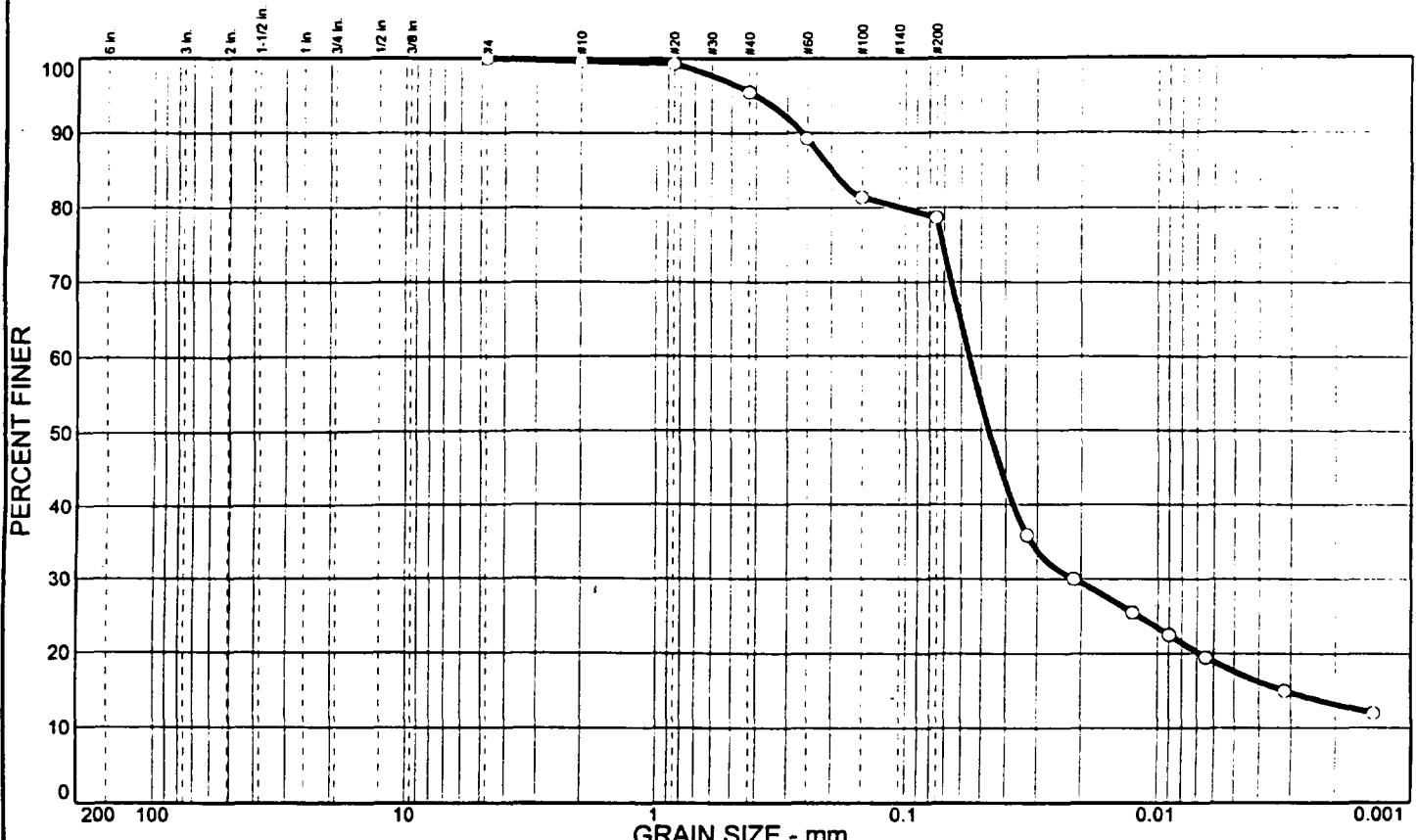
SILT = 78.5 % CLAY = 19.4

85= 0.06 D60= 0.05 D50= 0.04

30= 0.01 D15= 0.00

J. J. J.
MATERIALS ENGINEERING LABORATORY

Particle Size Distribution Report



% COBBLES	% GRAVEL	% SAND	% SILT	% CLAY	USCS	AASHTO	PL	LL
○		21.3	61.1	17.6	---	---	---	---

SIEVE inches size	PERCENT FINER			SIEVE number size	PERCENT FINER			SOIL DESCRIPTION ○ SILT, WITH SAND
	○				○			
				#4	100.0			
				#10	99.6			
				#20	99.3			
				#40	95.5			
				#60	89.3			
				#100	81.4			
				#200	78.7			
GRAIN SIZE								
D ₆₀	0.0557							
D ₃₀	0.0214							
D ₁₀								
COEFFICIENTS								
C _c								
C _u								

○ Source: COC-6

Sample No.: BSSED-PDC-DS-S-0-30"

Thompson Engineering

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOLUTIA SAUGET AREA I PROJECT

Project No.: 1999-00-0774

267A-318

Plate

GRAIN SIZE DISTRIBUTION TEST DATA

Client: O'BRIEN & GERE ENGINEERS, INC.
Project: SOUTIA SAUGET AREA 1 PROJECT
Project Number: 1999-00-0774

Sample Data

Source: COC-6
Sample No.: BSSED-PDC-DS-S-0-30"
Level or Depth:
Location:
Description: SILT, WITH SAND
Liquid Limit: - - -
SCS Classification: - - -
Testing Remarks:

Sample Length (in./cm.):
Plastic Limit: - - -
AASHTO Classification: - - -

Mechanical Analysis Data

Initial

Gross sample and tare = 175.00
Tare = 0.00
Gross sample weight = 175.00
Sample split on number 10 sieve
Split sample data:

Sample and tare = 66.50 Tare = .00 Sample weight = 66.50

Cumulative weight retained tare = .00
for cumulative weight retained = .00

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.73	99.6
# 20	0.23	99.3
# 40	2.75	95.5
# 60	6.87	89.3
# 100	12.16	81.4
# 200	13.96	78.7

Hydrometer Analysis Data

Preparation sieve is #10
Percent -#10 based upon complete sample= 99.6
Weight of hydrometer sample: 66.5
Calculated biased weight= 66.77
Table of composite correction values:

Temp, deg C: 15.5 19.5
Comp. corr: -8.0 -8.0

Meniscus correction only= 0
Specific gravity of solids= 2.65
Specific gravity correction factor= 1.000
Hydrometer type: 152H
Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.00	18.2	32.0	24.0	0.0140	32.0	11.0	0.0328	35.9
5.00	18.2	28.0	20.0	0.0140	28.0	11.7	0.0214	30.0
15.00	18.4	25.0	17.0	0.0139	25.0	12.2	0.0126	25.5
30.00	18.4	23.0	15.0	0.0139	23.0	12.5	0.0090	22.5
60.00	18.6	21.0	13.0	0.0139	21.0	12.9	0.0064	19.5
250.00	19.5	18.0	10.0	0.0137	18.0	13.3	0.0032	15.0
1440.00	15.4	16.0	8.0	0.0145	16.0	13.7	0.0014	12.0

Fractional Components

Gravel/Sand based on #4

Sand/Fines based on #200

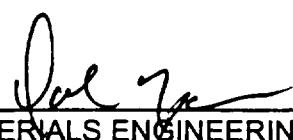
COBBLES = % GRAVEL =

SAND = 21.3 (% coarse = 0.4 % medium = 4.1 % fine = 16.8)

SILT = 61.1 % CLAY = 17.6

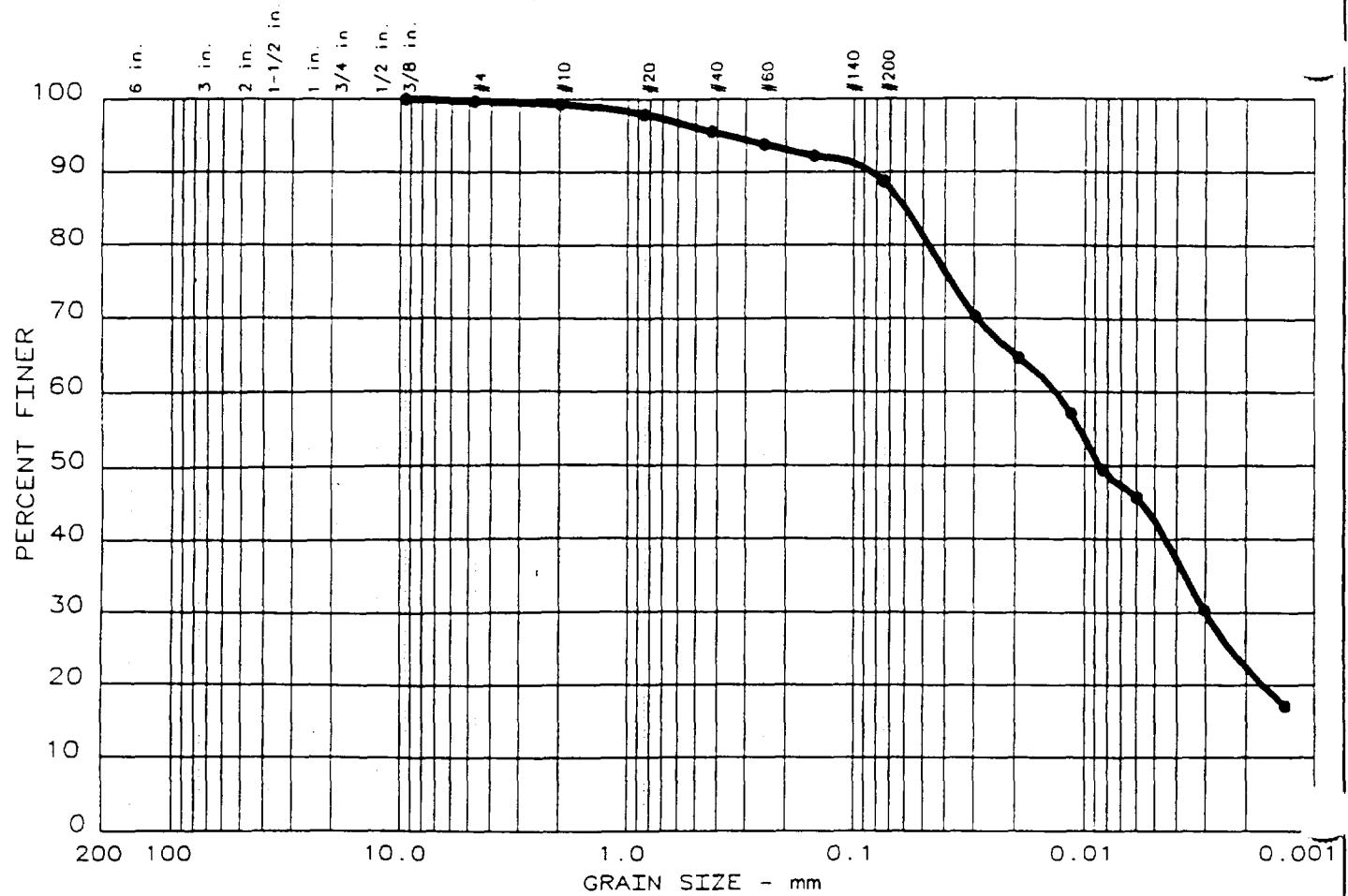
D₅= 0.20 D₆₀= 0.06 D₅₀= 0.05

D₁₀= 0.02 D₁₅= 0.00



MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND			% SILT		% CLAY	
● 5	0.0	0.3	10.9			46.3		42.5	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.06	0.01	0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, LITTLE SAND	- - -	- - -

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTOR B B-1	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
Date: 11/04/99	267A-321

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 5

11/04/99

Project No.: 1999-00-0774
Object: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR B B-1

Sample Description: SILT, LITTLE SAND

CS Class: - - -

Liquid limit: - - -

SHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Job No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 128.76

Tare = 0.00

Dry sample weight = 128.76

The split on number 10 sieve

Total sample data:

Sample and tare = 52.2 Tare = 0 Sample weight = 52.2

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve Cumul. Wt. Percent
retained finer

Sieve	Cumul. Wt.	Percent
	retained	finer
0.375 inches	0.00	100.0
# 4	0.40	99.7
# 10	0.96	99.3
# 20	0.71	97.9
# 40	1.94	95.6
# 60	2.86	93.8
# 100	3.70	92.2
# 200	5.50	88.8

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample= 99.3

Weight of hydrometer sample: 53.32

Grosscopic moisture correction:

Moist weight & tare = 30.79

Dry weight & tare = 30.39

Tare = 11.74

Grosscopic moisture= 2.1 %

calculated biased weight= 52.59
table of composite correction values:

Temp, deg C: 17.0 20.0

mp. corr: - 8.0 - 8.0

eniscus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

idrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.5	45.0	37.0	0.0141	45.0	8.9	0.0297	70.4
5.0	17.7	42.0	34.0	0.0140	42.0	9.4	0.0193	64.6
15.0	17.8	38.0	30.0	0.0140	38.0	10.1	0.0115	57.0
30.0	17.9	34.0	26.0	0.0140	34.0	10.7	0.0084	49.4
60.0	18.1	32.0	24.0	0.0140	32.0	11.0	0.0060	45.6
250.0	19.4	24.0	16.0	0.0137	24.0	12.4	0.0031	30.4
1440.0	18.2	17.0	9.0	0.0140	17.0	13.5	0.0014	17.1

Fractional Components

avel/Sand based on #4 sieve

nd/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.3 % SAND = 10.9

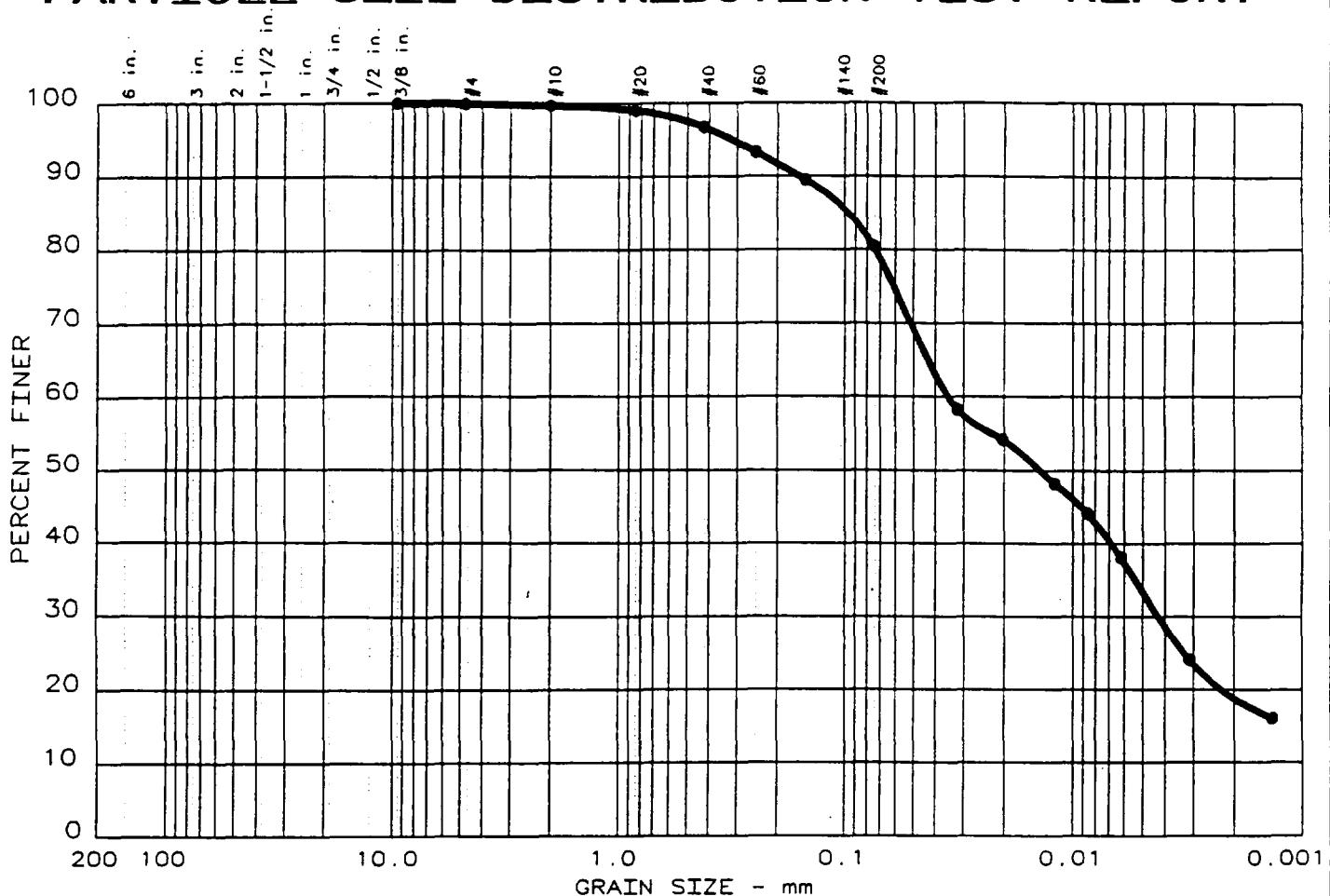
SILT = 46.3 % CLAY = 42.5

5= 0.06 D60= 0.013 D50= 0.009

n= 0.0030

Rerry Bayley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 4	0.0	0.1	19.4	47.1	33.4

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.10	0.04	0.01	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, WITH SAND	- - -	- - -

Project No.: 1999-00-0774	Remarks:
Project: SOUTIA SAUGET AREA 1 PROJECT	CLIENT: O'BRIEN AND GERE
● Location: CREEK SECTOR B B-2	ENGINEERS, INC.
Date: 11/04/99	267A-324
PARTICLE SIZE DISTRIBUTION TEST REPORT	
THOMPSON ENGINEERING	

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 4

Date: 11/04/99
Project No.: 1999-00-0774
Project: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR B B-2
Sample Description: SILT, WITH SAND

SCS Class: - - - Liquid limit: - - -
ASHTO Class: - - - Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 146.07

Tare = 0.00

Dry sample weight = 146.07

Sample split on number 10 sieve

First sample data:

Sample and tare = 49.62 Tare = 0 Sample weight = 49.62

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
-------	------------------------	------------------

0.375 inches	0.00	100.0
# 4	0.13	99.9
# 10	0.50	99.7
# 20	0.33	99.0
# 40	1.47	96.7
# 60	3.18	93.3
# 100	5.08	89.5
# 200	9.54	80.5

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample= 99.7

Weight of hydrometer sample: 51.52

Hygroscopic moisture correction:

Moist weight & tare = 34.43

Dry weight & tare = 33.58

Tare = 11.37

Hygroscopic moisture= 3.8 %

lculated biased weight= 49.79
ble of composite correction values:

Temp, deg C: 17.0 20.0

sp. corr: - 8.0 - 8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.4	37.0	29.0	0.0141	37.0	10.2	0.0319	58.2
5.0	17.6	35.0	27.0	0.0141	35.0	10.6	0.0204	54.2
15.0	17.6	32.0	24.0	0.0141	32.0	11.0	0.0121	48.2
30.0	17.6	30.0	22.0	0.0141	30.0	11.4	0.0087	44.2
60.0	18.0	27.0	19.0	0.0140	27.0	11.9	0.0062	38.2
250.0	19.3	20.0	12.0	0.0138	20.0	13.0	0.0031	24.1
1440.0	18.2	16.0	8.0	0.0140	16.0	13.7	0.0014	16.1

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.1 % SAND = 19.4

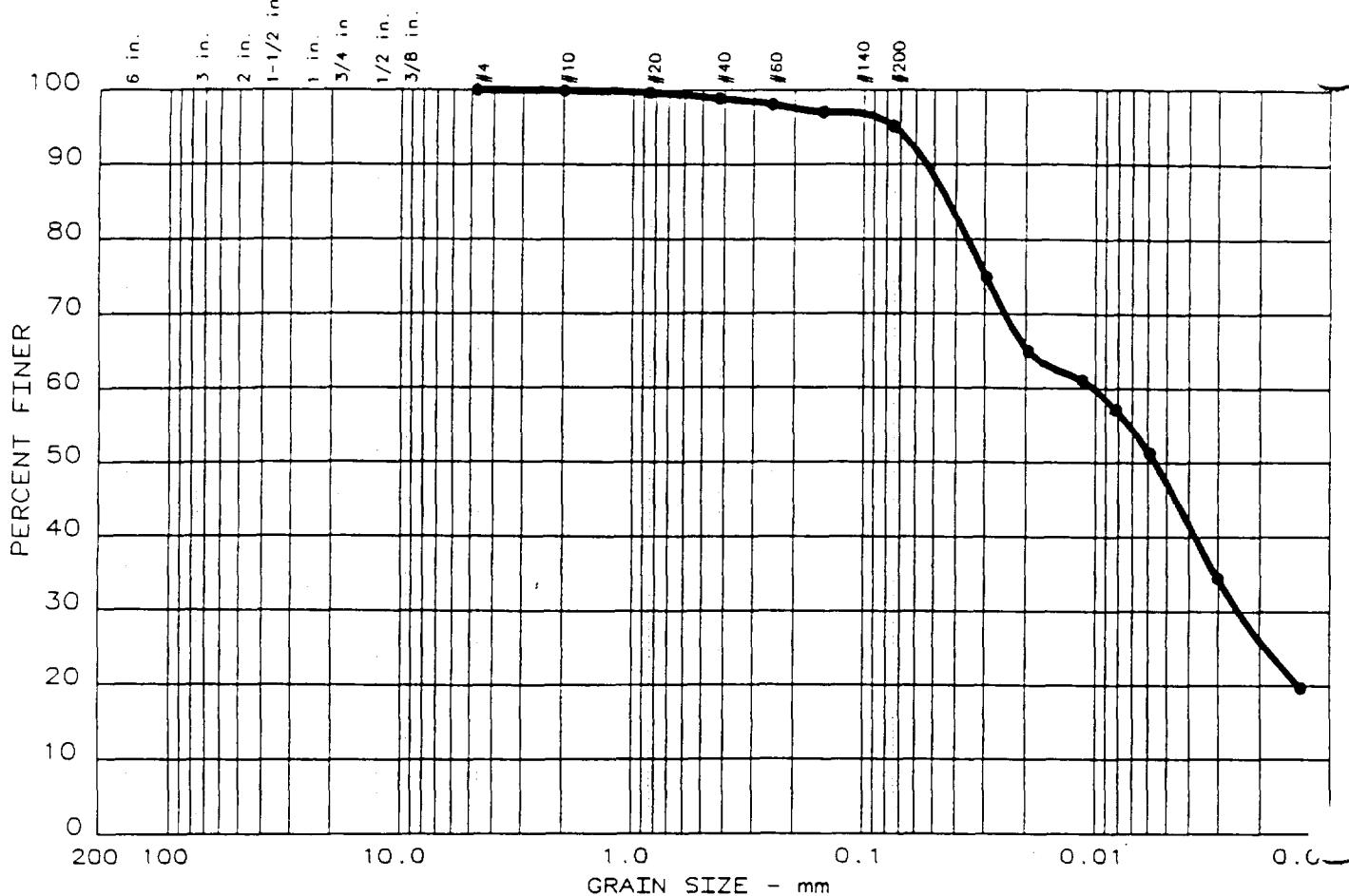
SILT = 47.1 % CLAY = 33.4

Σ = 0.10 D60= 0.035 D50= 0.014

D= 0.0043

Leroy Barker
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PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
●	6	0.0	0.0	4.9	47.8	47.3		

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	0.04	0.01	0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTOR B B-3 DUP	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
--	---

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT

THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 6

: 11/04/99
ject No.: 1999-00-0774
roject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR B B-3 DUP

Sample Description: SILT, TRACE SAND

CS Class: - - -

Liquid limit: - - -

SHTO Class: - - -

Plasticity index: - - -

Notes

marks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

y sample and tare= 194.61

re = 0.00

y sample weight = 194.61

le split on number 10 sieve

t sample data:

sample and tare = 50.7 Tare = 0 Sample weight = 50.7

Cumulative weight retained tare= 0

re for cumulative weight retained= 0

Sieve Cumul. Wt. Percent

retained finer

# 4	0.00	100.0
# 10	0.12	99.9
# 20	0.12	99.7
# 40	0.54	98.9
# 60	0.96	98.0
# 100	1.49	97.0
# 200	2.44	95.1

Hydrometer Analysis Data

paration sieve is number 10

rcent -# 10 based on complete sample= 99.9

ight of hydrometer sample: 52.28

grossopic moisture correction:

Moist weight & tare = 38.68

Dry weight & tare = 37.86

Tare = 11.59

Hygroscopic moisture= 3.1 %

ulated biased weight= 50.73

able of composite correction values:

Temp, deg C: 17.0 20.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.5	46.0	38.0	0.0141	46.0	8.8	0.0295	74.9
5.0	17.5	41.0	33.0	0.0141	41.0	9.6	0.0195	65.1
15.0	17.6	39.0	31.0	0.0141	39.0	9.9	0.0114	61.1
30.0	17.7	37.0	29.0	0.0140	37.0	10.2	0.0082	57.2
60.0	18.1	34.0	26.0	0.0140	34.0	10.7	0.0059	51.3
250.0	19.3	25.5	17.5	0.0138	25.5	12.1	0.0030	34.5
1440.0	18.3	18.0	10.0	0.0139	18.0	13.3	0.0013	19.7

Fractional Components

Gravel/Sand based on #4 sieve

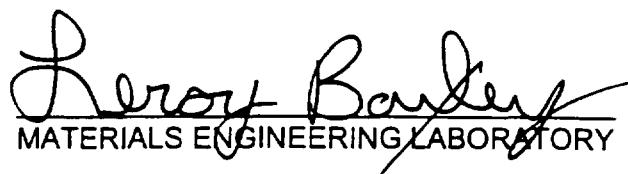
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 4.9

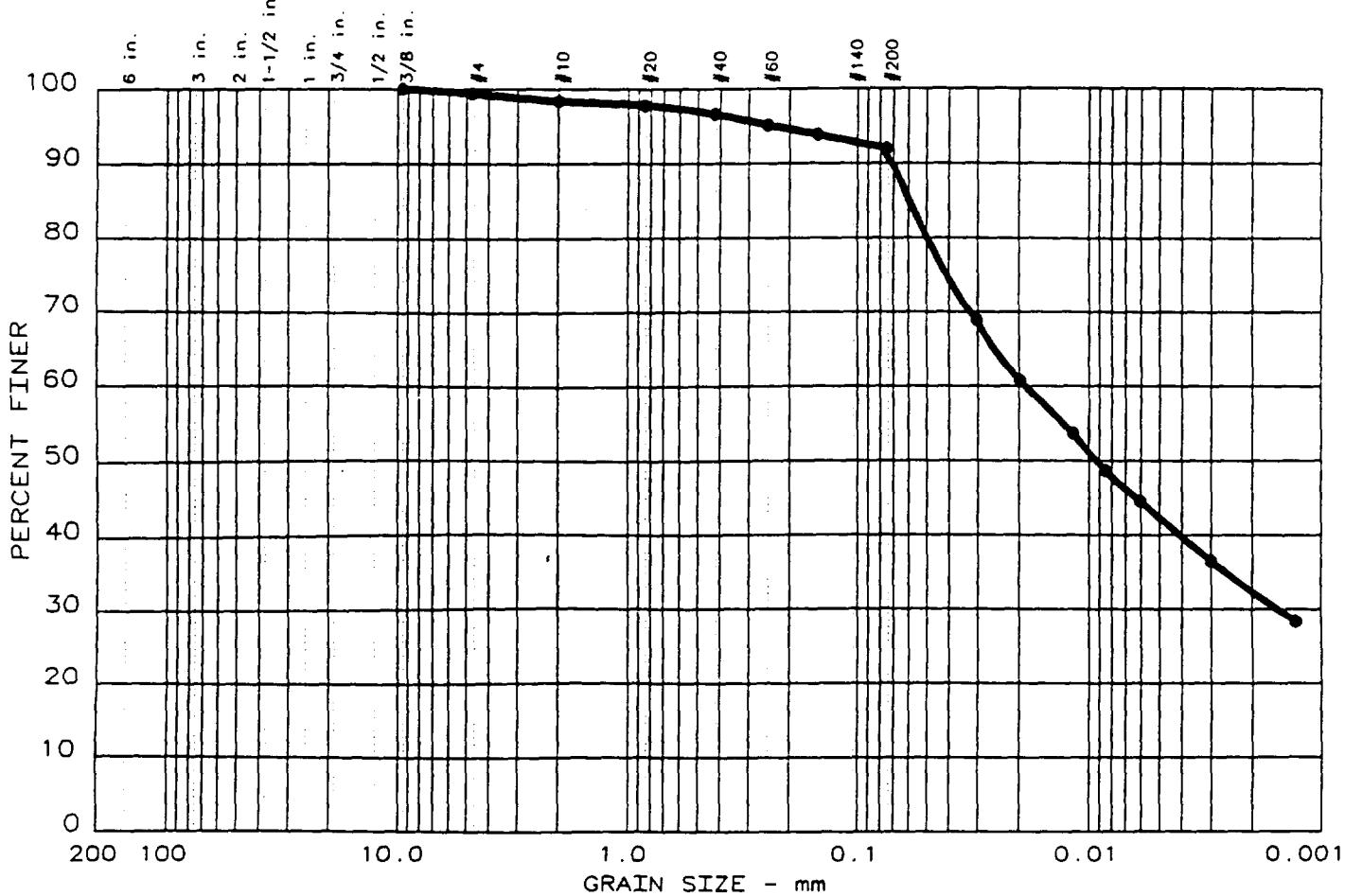
SILT = 47.8 % CLAY = 47.3

5= 0.04 D60= 0.010 D50= 0.006

0= 0.0024


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PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 8	0.0	0.7	7.4		49.7		42.2	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.06	0.02	0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	---	---

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTOR C C-1	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
--	---

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 8

Date: 11/04/99

Subject No.: 1999-00-0774

Project: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR C C-1

Sample Description: SILT, TRACE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

S. No.:

Mechanical Analysis Data

Initial

Dry sample and tare = 82.16

Tare = 0.00

Dry sample weight = 82.16

Sample split on number 10 sieve

Dry sample data:

Sample and tare = 48.54 Tare = 0 Sample weight = 48.54

Cumulative weight retained tare = 0

Tare for cumulative weight retained = 0

Sieve Cumul. Wt. Percent
retained finer

0.375 inches	0.00	100.0
# 4	0.55	99.3
# 10	1.34	98.4
# 20	0.26	97.8
# 40	0.87	96.6
# 60	1.60	95.1
# 100	2.24	93.8
# 200	3.16	92.0

Hydrometer Analysis Data

Preparation sieve is number 10

Percent - # 10 based on complete sample = 98.4

Weight of hydrometer sample: 52.06

Grossoscopic moisture correction:

Moist weight & tare = 25.74

Dry weight & tare = 24.80

Tare = 11.84

Grossoscopic moisture = 7.3 %

Calculated biased weight = 49.34
Table of composite correction values:

Temp, deg C: 17.0 20.0

p. corr: -8.0 -8.0

scus correction only = 0

Specific gravity of solids = 2.65

Specific gravity correction factor = 1.000

Drometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.9	42.0	34.0	0.0140	42.0	9.4	0.0304	68.9
5.0	17.9	38.0	30.0	0.0140	38.0	10.1	0.0199	60.8
15.0	17.9	34.5	26.5	0.0140	34.5	10.6	0.0118	53.7
30.0	17.9	32.0	24.0	0.0140	32.0	11.0	0.0085	48.6
60.0	18.1	30.0	22.0	0.0140	30.0	11.4	0.0061	44.6
250.0	19.1	26.0	18.0	0.0138	26.0	12.0	0.0030	36.5
440.0	18.6	22.0	14.0	0.0139	22.0	12.7	0.0013	28.4

Fractional Components

Gravel/Sand based on #4 sieve

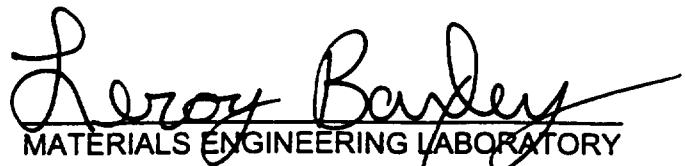
Sand/Fines based on #200 sieve

- 3 in. = 0.0 % GRAVEL = 0.7 % SAND = 7.4

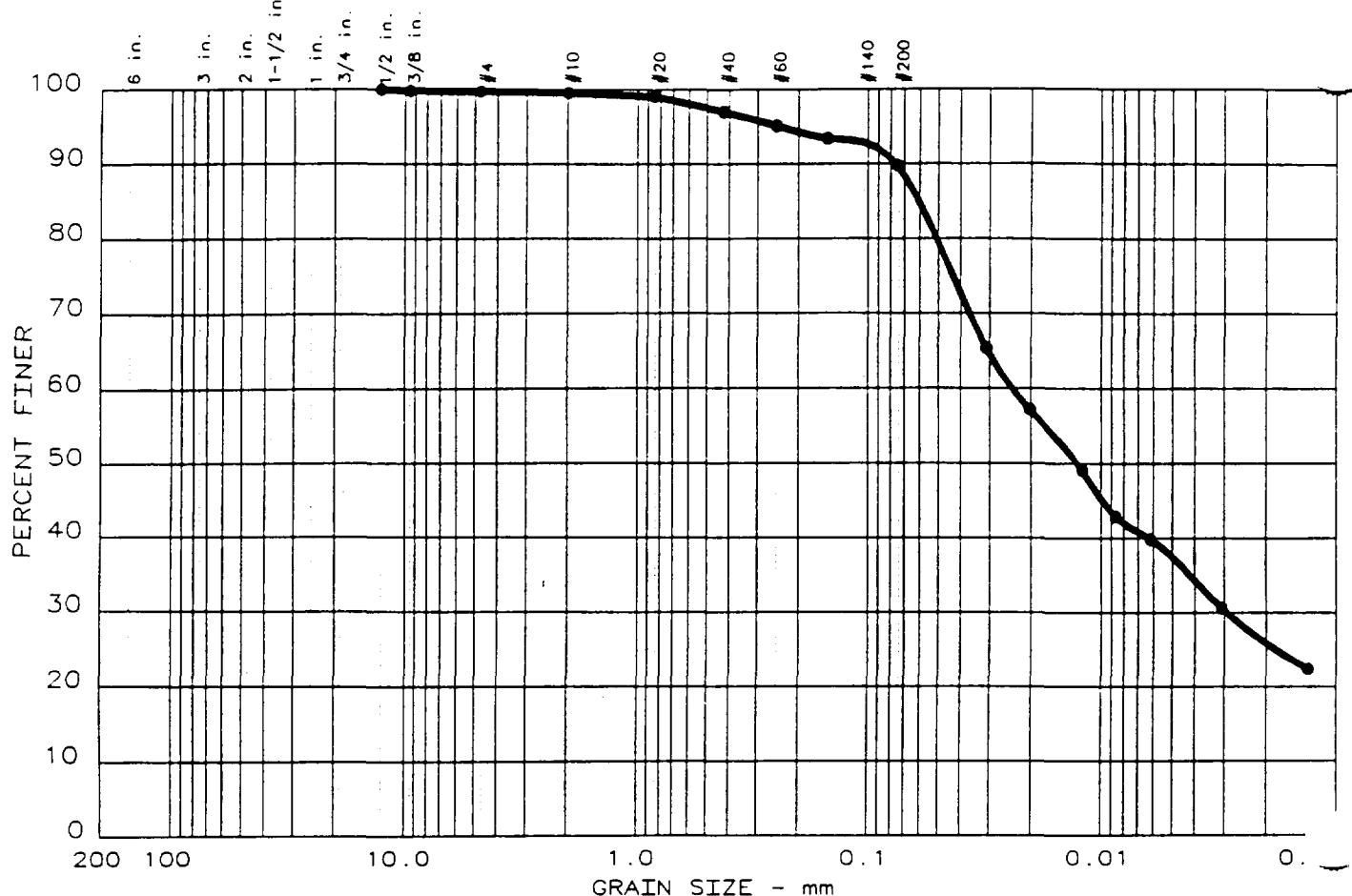
SILT = 49.7 % CLAY = 42.2

= 0.06 D60= 0.019 D50= 0.009

= 0.0016


Leroy Bayles
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PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
•	9	0.0	0.3	10.0	52.3

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
•	- - -	0.06	0.02	0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
• SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 • Location: CREEK SECTOR C C-2

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT

THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 9

: 11/04/99
ject No.: 1999-00-0774
roject: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

ocation of Sample: CREEK SECTOR C C-2

ample Description: SILT, TRACE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

marks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

y sample and tare= 63.68

re = 0.00

v sample weight = 63.68

le split on number 10 sieve

t sample data:

sample and tare = 48.76 Tare = 0 Sample weight = 48.76

Cumulative weight retained tare= 0

re for cumulative weight retained= 0

Sieve	Cumul. Wt.	Percent
	retained	finer
0.5 inches	0.00	100.0
0.375 inches	0.13	99.8
# 4	0.17	99.7
# 10	0.29	99.5
# 20	0.25	99.0
# 40	1.25	97.0
# 60	2.18	95.1
# 100	3.01	93.4
# 200	4.80	89.7

Hydrometer Analysis Data

eparation sieve is number 10

rcent -# 10 based on complete sample= 99.5

ight of hydrometer sample: 52.22

grossopic moisture correction:

Moist weight & tare = 25.94

Dry weight & tare = 24.96

re = 11.29

Hygroscopic moisture= 7.2 %
calculated biased weight= 48.95
Table of composite correction values:

Temp, deg C: 17.0 20.0

Comp. corr: - 8.0 - 8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.8	40.0	32.0	0.0140	40.0	9.7	0.0310	65.4
5.0	17.8	36.0	28.0	0.0140	36.0	10.4	0.0202	57.2
15.0	17.6	32.0	24.0	0.0141	32.0	11.0	0.0121	49.0
30.0	17.8	29.0	21.0	0.0140	29.0	11.5	0.0087	42.9
60.0	18.0	27.5	19.5	0.0140	27.5	11.8	0.0062	39.8
250.0	19.0	23.0	15.0	0.0138	23.0	12.5	0.0031	30.6
1440.0	18.6	19.0	11.0	0.0139	19.0	13.2	0.0013	22.5

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

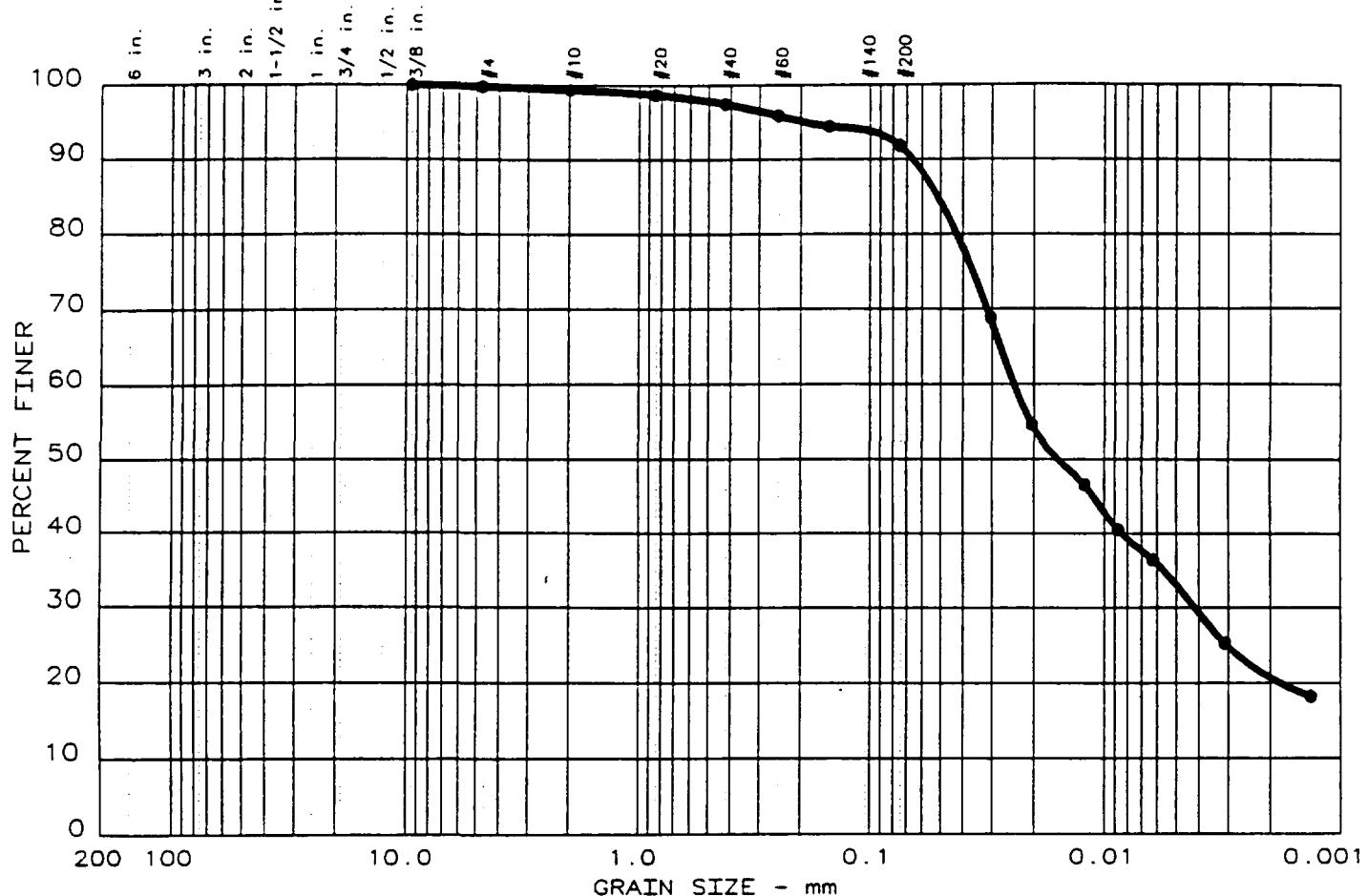
+ 3 in. = 0.0 % GRAVEL = 0.3 % SAND = 10.0

SILT = 52.3 % CLAY = 37.4

S= 0.06 D60= 0.024 D50= 0.013
0.0029

Leroy Barley
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PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 2	0.0	0.2	8.0	58.7	33.1

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.05	0.02	0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: CREEK SECTOR C C-3

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 2

: 11/04/99
Object No.: 1999-00-0774
Project: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR C C-3
Sample Description: SILT, TRACE SAND

SCS Class: - - - Liquid limit: - - -
ASHTO Class: - - - Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

Dry sample and tare = 61.19
Tare = 0.00
Dry sample weight = 61.19
Sample split on number 10 sieve

Moist sample data:

Sample and tare = 49.07 Tare = 0 Sample weight = 49.07
Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.375 inches	0.00	100.0
# 4	0.13	99.8
# 10	0.41	99.3
# 20	0.31	98.7
# 40	0.92	97.5
# 60	1.70	95.9
# 100	2.43	94.4
# 200	3.71	91.8

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 99.3
Weight of hydrometer sample: 51.69
Grossscopic moisture correction:
Moist weight & tare = 23.47
Dry weight & tare = 22.87
Tare = 11.64
Grossoscopic moisture= 5.3 %

calculated biased weight = 49.40
table of composite correction values:

Temp, deg C: 17.0 20.0
mp. corr: - 8.0 - 8.0

discus correction only = 0

specific gravity of solids = 2.65

specific gravity correction factor = 1.000

sedimentometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.4	42.0	34.0	0.0141	42.0	9.4	0.0306	68.8
5.0	17.5	35.0	27.0	0.0141	35.0	10.6	0.0205	54.7
15.0	17.5	31.0	23.0	0.0141	31.0	11.2	0.0122	46.6
30.0	17.6	28.0	20.0	0.0141	28.0	11.7	0.0088	40.5
60.0	18.0	26.0	18.0	0.0140	26.0	12.0	0.0063	36.4
250.0	19.6	20.5	12.5	0.0137	20.5	12.9	0.0031	25.3
1440.0	18.2	17.0	9.0	0.0140	17.0	13.5	0.0014	18.2

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.2 % SAND = 8.0

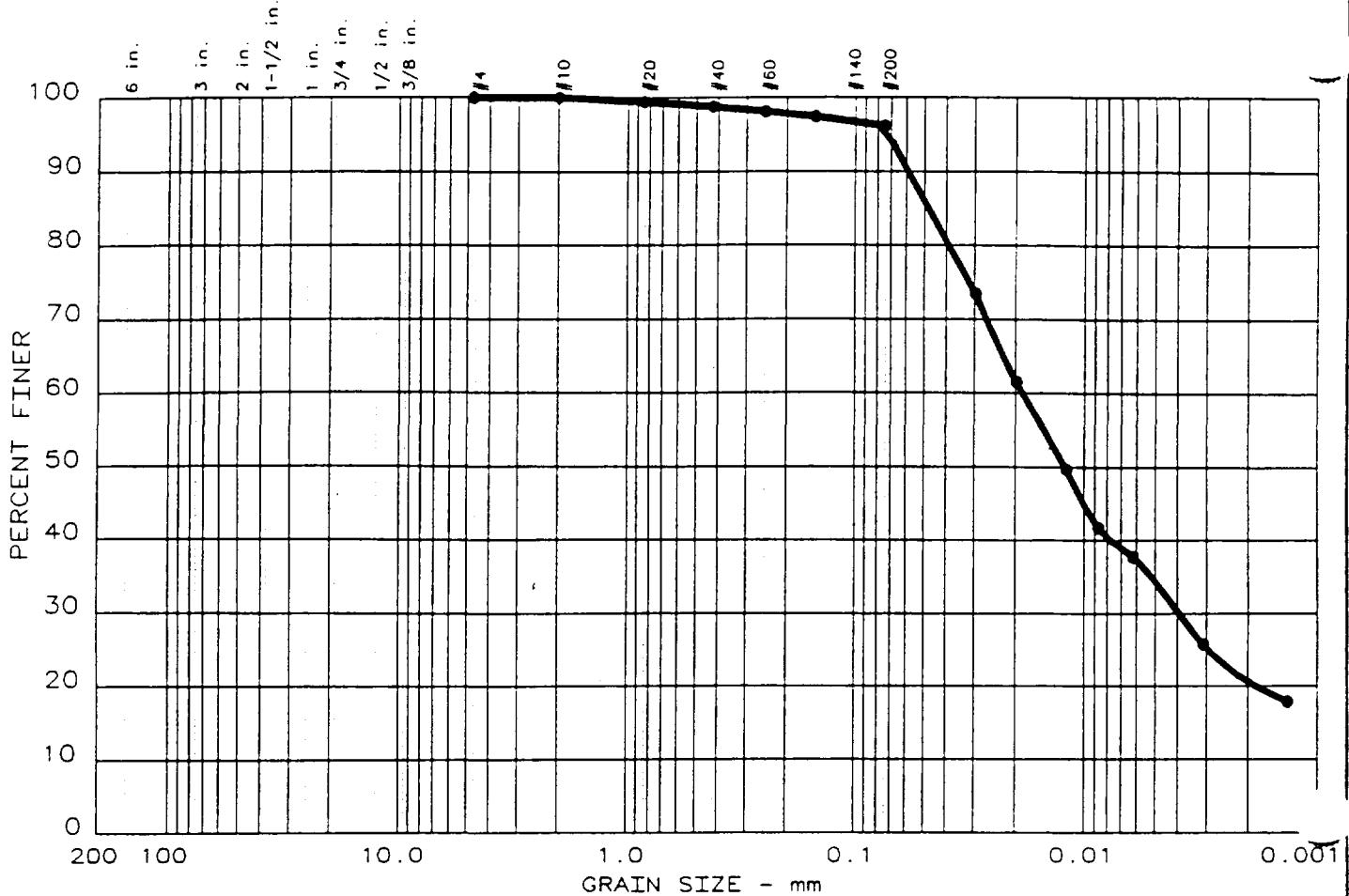
SILT = 58.7 % CLAY = 33.1

D5= 0.05 D60= 0.024 D50= 0.016

D0= 0.0041

Leroy Barker
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
●	3	0.0	0.0	3.9		61.6		34.5

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	- - -	0.05	0.02	0.01	0.004			

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTOR D D-2	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
Date: 11/04/99	267A-339

PARTICLE SIZE DISTRIBUTION TEST REPORT

THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 3

: 11/04/99
ject No.: 1999-00-0774
roject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR D D-2

ample Description: SILT, TRACE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

marks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

ig. No.:

Mechanical Analysis Data

Initial

cy sample and tare= 139.93

are = 0.00

cy sample weight = 139.93

le split on number 10 sieve

t sample data:

Sample and tare = 50.35 Tare = 0 Sample weight = 50.35

Cumulative weight retained tare= 0

are for cumulative weight retained= 0

Sieve Cumul. Wt. Percent

retained finer

# 4	0.00	100.0
# 10	0.05	100.0
# 20	0.28	99.4
# 40	0.61	98.8
# 60	0.96	98.1
# 100	1.30	97.4
# 200	1.95	96.1

Hydrometer Analysis Data

eparation sieve is number 10

ercent -# 10 based on complete sample= 100.0

eight of hydrometer sample: 53.06

ygroscopic moisture correction:

Moist weight & tare = 25.13

Dry weight & tare = 24.43

Tare = 11.43

Hygroscopic moisture= 5.4 %

Calculated biased weight= 50.37

able of composite correction values:

Temp, deg C: 17.0 20.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.4	45.0	37.0	0.0141	45.0	8.9	0.0298	73.5
5.0	17.6	39.0	31.0	0.0141	39.0	9.9	0.0198	61.5
15.0	17.6	33.0	25.0	0.0141	33.0	10.9	0.0120	49.6
30.0	17.7	29.0	21.0	0.0140	29.0	11.5	0.0087	41.7
60.0	18.0	27.0	19.0	0.0140	27.0	11.9	0.0062	37.7
250.0	19.5	21.0	13.0	0.0137	21.0	12.9	0.0031	25.8
1440.0	18.1	17.0	9.0	0.0140	17.0	13.5	0.0014	17.9

Fractional Components

Gravel/Sand based on #4 sieve

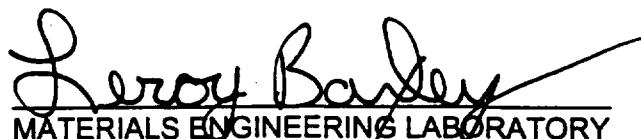
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 3.9

SILT = 61.6 % CLAY = 34.5

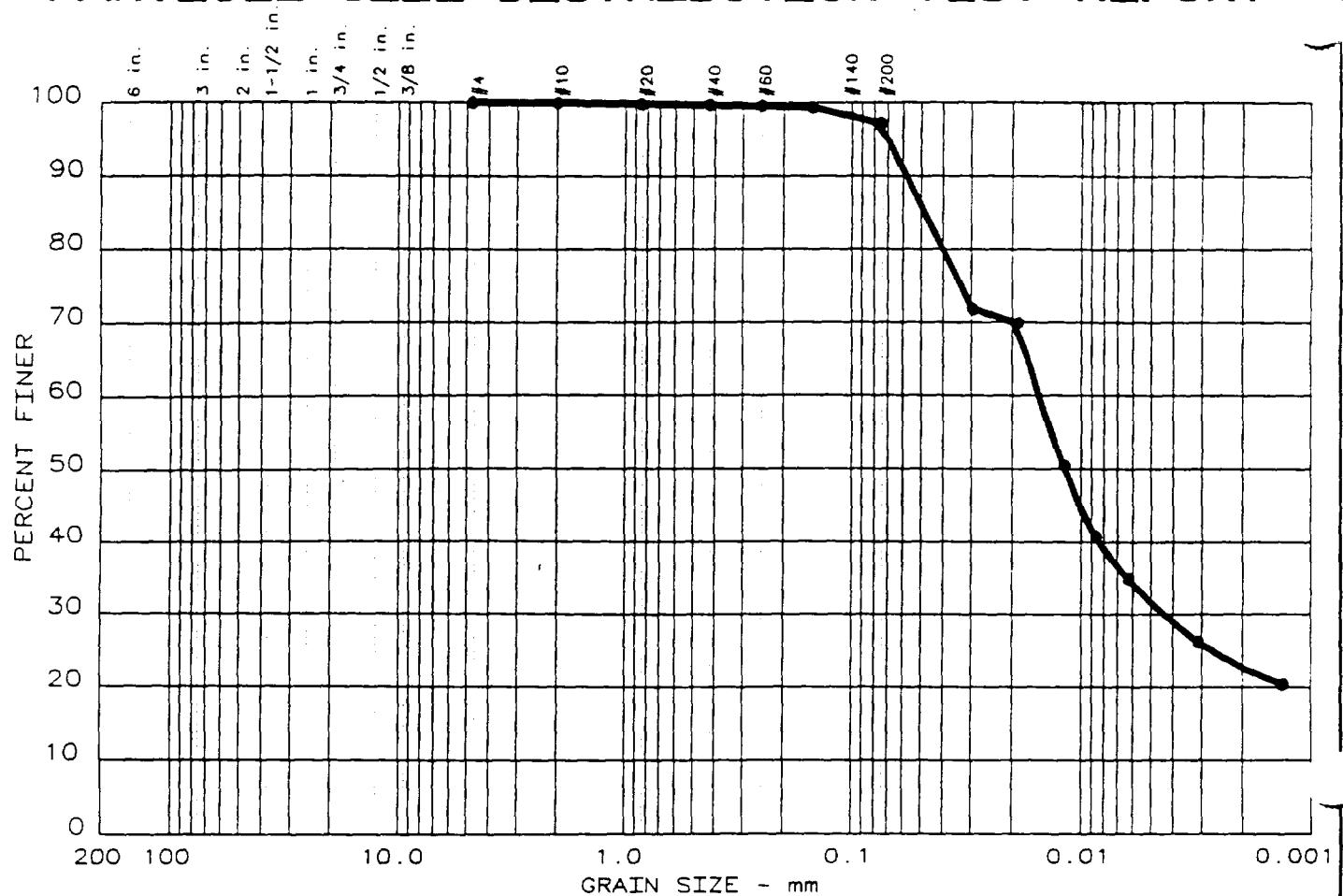
D5= 0.05 D60= 0.019 D50= 0.012

D0= 0.0039



Jerry Baxley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	7	0.0	0.0	2.9	65.4
					31.7

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	0.05	0.02	0.01	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTOR D D-3	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
Date: 11/04/99	267A-342

PARTICLE SIZE DISTRIBUTION TEST REPORT

THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 7

Date: 11/04/99
Project No.: 1999-00-0774
Project: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTOR D D-3

Sample Description: SILT, TRACE SAND

SCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 143.31

Tare = 0.00

Sample weight = 143.31

Sample split on number 10 sieve

Dry sample data:

Sample and tare = 51.53 Tare = 0 Sample weight = 51.53

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt.	Percent finer
	retained	
# 4	0.00	100.0
# 10	0.04	100.0
# 20	0.06	99.9
# 40	0.14	99.7
# 60	0.21	99.6
# 100	0.31	99.4
# 200	1.47	97.1

Hydrometer Analysis Data

Separation sieve is number 10

Percent -# 10 based on complete sample= 100.0

Weight of hydrometer sample: 53.43

Hygroscopic moisture correction:

Moist weight & tare = 24.78

Dry weight & tare = 24.31

Tare = 11.55

Hygroscopic moisture= 3.7 %

Calculated biased weight= 51.55

able of composite correction values:

Temp, deg C: 17.0 20.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.8	45.0	37.0	0.0140	45.0	8.9	0.0296	71.8
5.0	17.8	44.0	36.0	0.0140	44.0	9.1	0.0189	69.8
15.0	17.8	34.0	26.0	0.0140	34.0	10.7	0.0119	50.4
30.0	18.0	29.0	21.0	0.0140	29.0	11.5	0.0087	40.7
60.0	18.1	26.0	18.0	0.0140	26.0	12.0	0.0063	34.9
250.0	19.3	21.5	13.5	0.0138	21.5	12.8	0.0031	26.2
1440.0	18.4	18.5	10.5	0.0139	18.5	13.3	0.0013	20.4

Fractional Components

Gravel/Sand based on #4 sieve

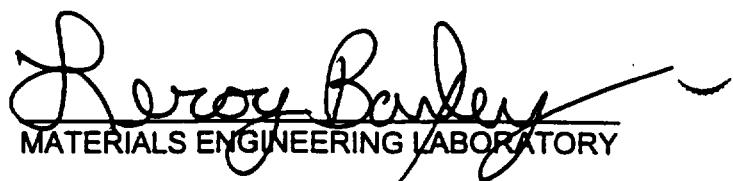
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 2.9

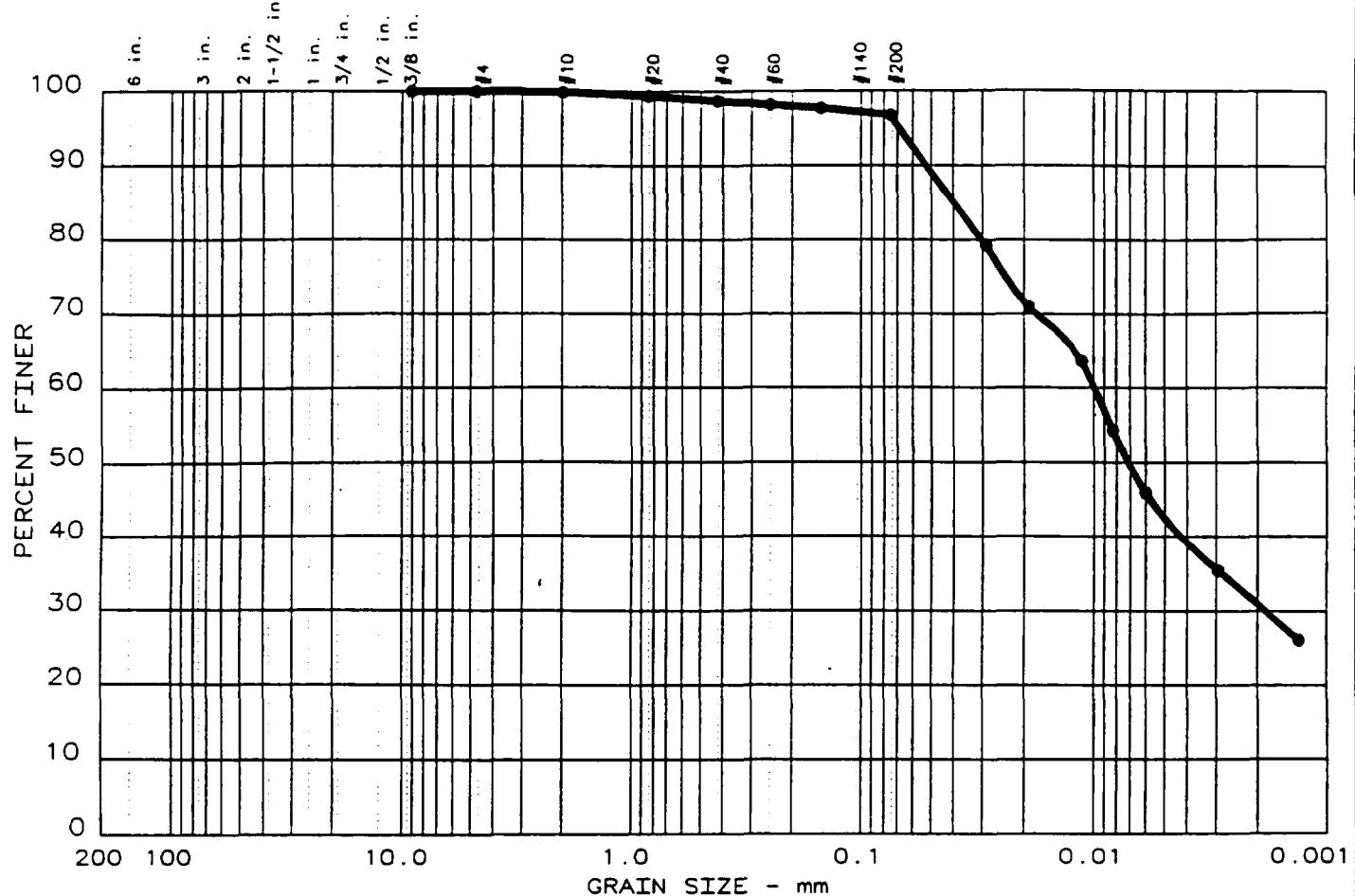
SILT = 65.4 % CLAY = 31.7

D5= 0.05 D60= 0.015 D50= 0.012

D0= 0.0044


MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	19	0.0	0.0	3.3	54.3

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	0.04	0.01	0.01	0.002				

MATERIAL DESCRIPTION		USCS	AASHTO
● SILT, TRACE SAND		- - -	- - -

Project No.: 1999-00-0774
 Project: SOUTIA SAUGET AREA 1 PROJECT
 ● Location: CREEK SECTION E S1
 Date: 11/04/99

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

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PARTICLE SIZE DISTRIBUTION TEST REPORT

THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 19

11/04/99

Object No.: 1999-00-0774

Object: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION E S1

Sample Description: SILT, TRACE SAND

SCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 69.68

Tare = 0.00

Dry sample weight = 69.68

The split on number 10 sieve

Dry sample data:

Sample and tare = 47.85 Tare = 0 Sample weight = 47.85

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve Cumul. Wt. Percent

retained finer

0.357 inches	0.00	100.0
# 4	0.02	100.0
# 10	0.10	99.9
# 20	0.25	99.3
# 40	0.56	98.7
# 60	0.81	98.2
# 100	1.04	97.7
# 200	1.51	96.7

Hydrometer Analysis Data

Separation sieve is number 10

Percent -# 10 based on complete sample= 99.9

Weight of hydrometer sample: 50.48

Grosscopic moisture correction:

Moist weight & tare = 32.00

Dry weight & tare = 30.92

Tare = 11.30

Grosscopic moisture= 5.5 %

calculated biased weight = 47.92
table of composite correction values:

Temp, deg C: 18.0 22.0
mp. corr: - 8.0 - 8.0

scus correction only = 0

specific gravity of solids = 2.65

specific gravity correction factor = 1.000

hydrometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	46.0	38.0	0.0139	46.0	8.8	0.0290	79.3
5.0	18.7	42.0	34.0	0.0139	42.0	9.4	0.0190	71.0
15.0	18.9	38.5	30.5	0.0138	38.5	10.0	0.0113	63.7
30.0	18.9	34.0	26.0	0.0138	34.0	10.7	0.0083	54.3
60.0	19.2	30.0	22.0	0.0138	30.0	11.4	0.0060	45.9
250.0	21.6	25.0	17.0	0.0134	25.0	12.2	0.0030	35.5
1440.0	18.0	20.5	12.5	0.0140	20.5	12.9	0.0013	26.1

Fractional Components

Gravel/Sand based on #4 sieve

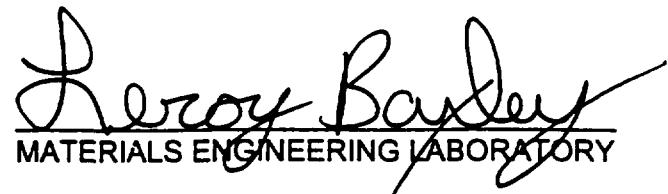
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 3.3

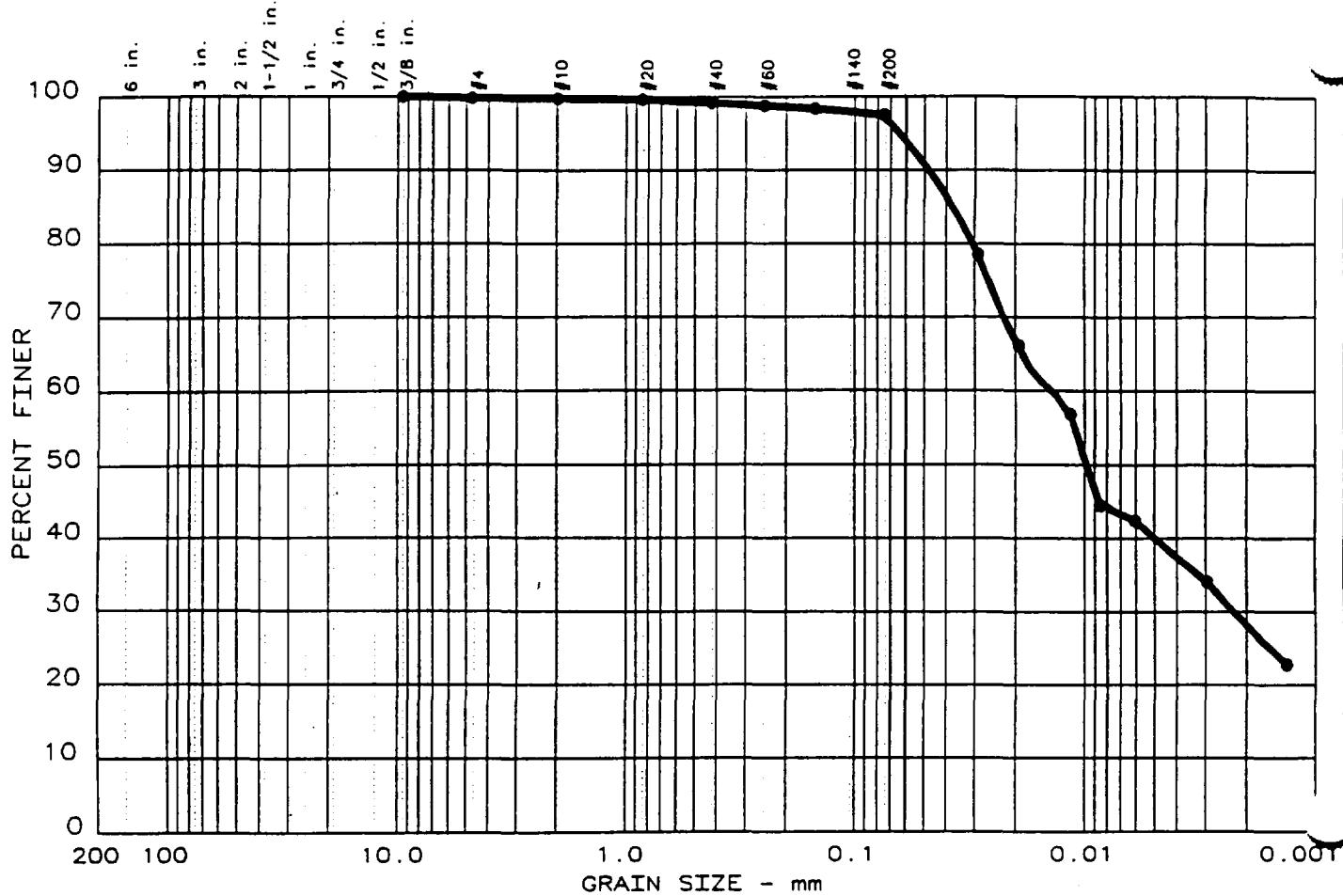
SILT = 54.3 % CLAY = 42.4

D5 = 0.04 D60 = 0.010 D50 = 0.007

D0 = 0.0018


Leroy Basley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 20	0.0	0.2	2.4		57.5		39.9	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.04	0.01	0.01	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774	Remarks:
Project: SOLUTIA SAUGET AREA 1 PROJECT	
● Location: CREEK SECTION E S2	CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 20

: 11/04/99
Object No.: 1999-00-0774
Object: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION E S2

Sample Description: SILT, TRACE SAND

ICS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 98.26

Tare = 0.00

Dry sample weight = 98.26

Sample split on number 10 sieve

Last sample data:

Sample and tare = 48.27 Tare = 0 Sample weight = 48.27

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve	Cumul. Wt.	Percent
	retained	finer
0.375 inches	0.00	100.0
# 4	0.16	99.8
# 10	0.21	99.8
# 20	0.06	99.7
# 40	0.31	99.1
# 60	0.48	98.8
# 100	0.68	98.4
# 200	1.12	97.5

Hydrometer Analysis Data

Separation sieve is number 10

Percent -# 10 based on complete sample= 99.8

Weight of hydrometer sample: 51.41

Hygroscopic moisture correction:

Moist weight & tare = 30.10

Dry weight & tare = 28.93

Tare = 10.95

Hygroscopic moisture= 6.5 %

calculated biased weight = 48.37
table of composite correction values:

mp, deg C: 17.0 22.0

mp. corr: - 8.0 - 8.0

meniscus correction only = 0

specific gravity of solids = 2.65

specific gravity correction factor = 1.000

hydrometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	46.0	38.0	0.0139	46.0	8.8	0.0290	78.6
5.0	18.7	40.0	32.0	0.0139	40.0	9.7	0.0194	66.2
15.0	18.9	35.5	27.5	0.0138	35.5	10.5	0.0116	56.9
30.0	18.9	29.5	21.5	0.0138	29.5	11.5	0.0085	44.4
60.0	19.1	28.5	20.5	0.0138	28.5	11.6	0.0061	42.4
250.0	21.4	24.5	16.5	0.0134	24.5	12.3	0.0030	34.1
1440.0	17.9	19.0	11.0	0.0140	19.0	13.2	0.0013	22.7

Fractional Components

Gravel/Sand based on #4 sieve

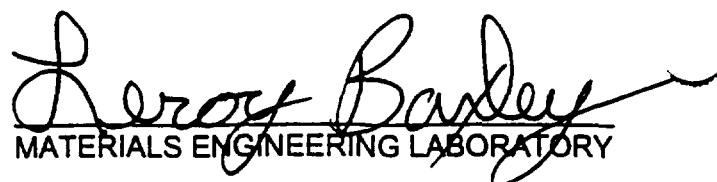
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.2 % SAND = 2.4

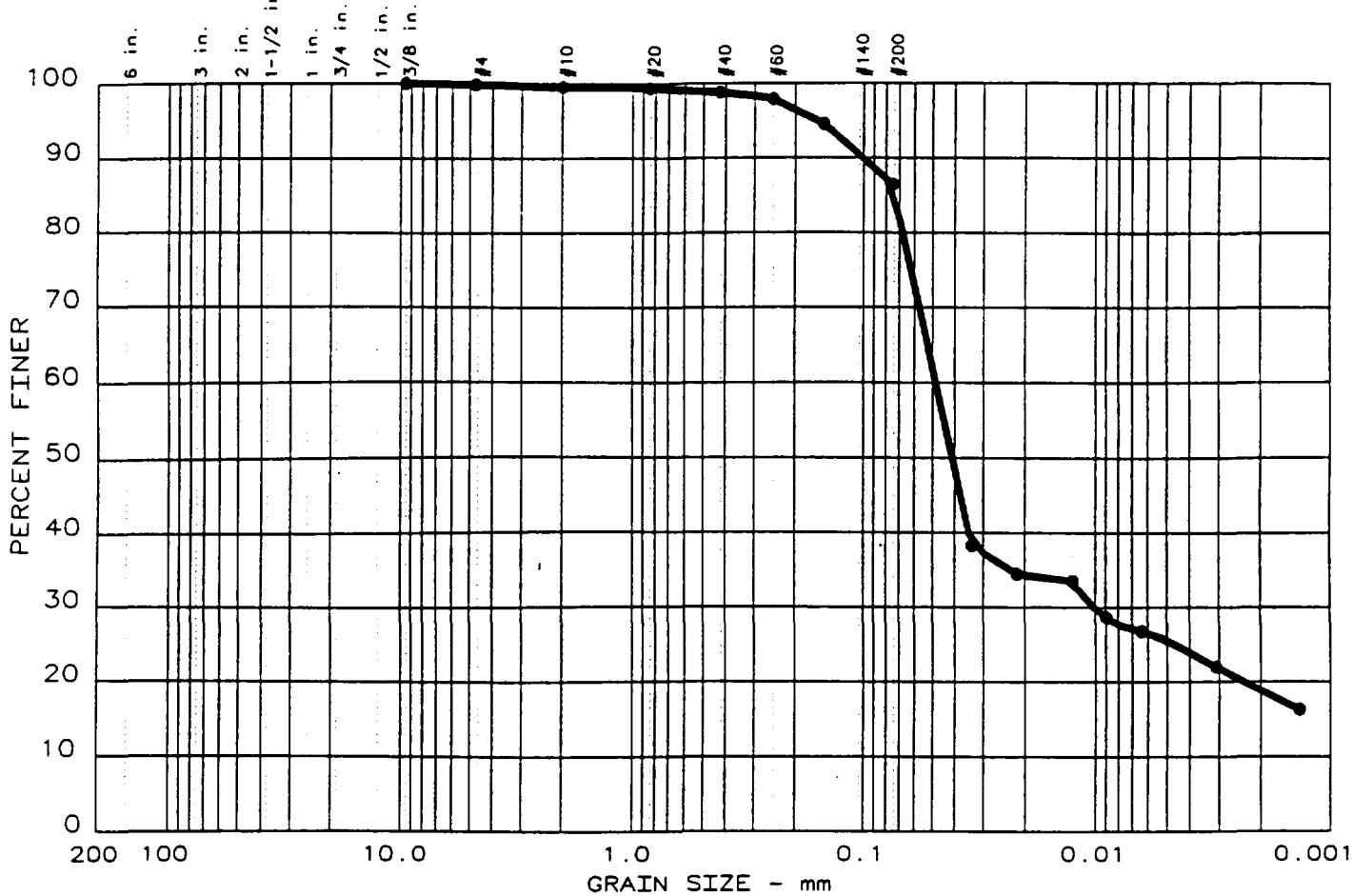
SILT = 57.5 % CLAY = 39.9

D₃₅ = 0.04 D₆₀ = 0.014 D₅₀ = 0.010

D₁₀ = 0.0023


Leroy Basley
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PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 1	0.0	0.2	13.3		61.0		25.5	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.07	0.05	0.04	0.010				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, LITTLE SAND	---	---

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: CREEK SECTION E S3

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99+

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GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 1

: 11/04/99+
ect No.: 1999-00-0774
oject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION E S3

ample Description: SILT, LITTLE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

emarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

ig. No.:

Mechanical Analysis Data

Initial

ry sample and tare= 225.54

are = 0.00

ry sample weight = 225.54

le split on number 10 sieve

t sample data:

Sample and tare = 52.02 Tare = 0 Sample weight = 52.02

Cumulative weight retained tare= 0

are for cumulative weight retained= 0

Sieve	Cumul. Wt.	Percent
	retained	finer
0.375 inches	0.00	100.0
# 4	0.48	99.8
# 10	1.12	99.5
# 20	0.08	99.4
# 40	0.37	98.8
# 60	0.86	97.9
# 100	2.60	94.5
# 200	6.81	86.5

Hydrometer Analysis Data

eparation sieve is number 10

ercent -# 10 based on complete sample= 99.5

eight of hydrometer sample: 53.95

ygroscopic moisture correction:

Moist weight & tare = 23.15

Dry weight & tare = 22.71

Tare = 10.82

ygroscopic moisture= 3.7 %

Calculated biased weight = 52.28
Table of composite correction values:

Temp, deg C: 17.0 21.0

App. corr: - 8.0 - 8.0

Hydrometer correction only = 0

Specific gravity of solids = 2.65

Specific gravity correction factor = 1.000

Hydrometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.4	28.0	20.0	0.0139	28.0	11.7	0.0337	38.3
5.0	18.4	26.0	18.0	0.0139	26.0	12.0	0.0216	34.4
15.0	18.4	25.5	17.5	0.0139	25.5	12.1	0.0125	33.5
30.0	18.5	23.0	15.0	0.0139	23.0	12.5	0.0090	28.7
60.0	18.5	22.0	14.0	0.0139	22.0	12.7	0.0064	26.8
250.0	20.4	19.5	11.5	0.0136	19.5	13.1	0.0031	22.0
1440.0	17.5	16.5	8.5	0.0141	16.5	13.6	0.0014	16.3

Fractional Components

Gravel/Sand based on #4 sieve

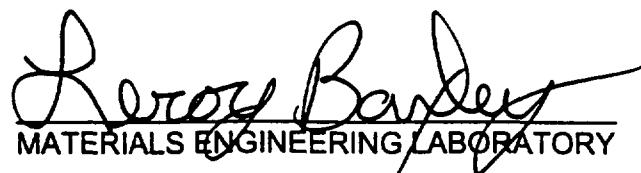
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.2 % SAND = 13.3

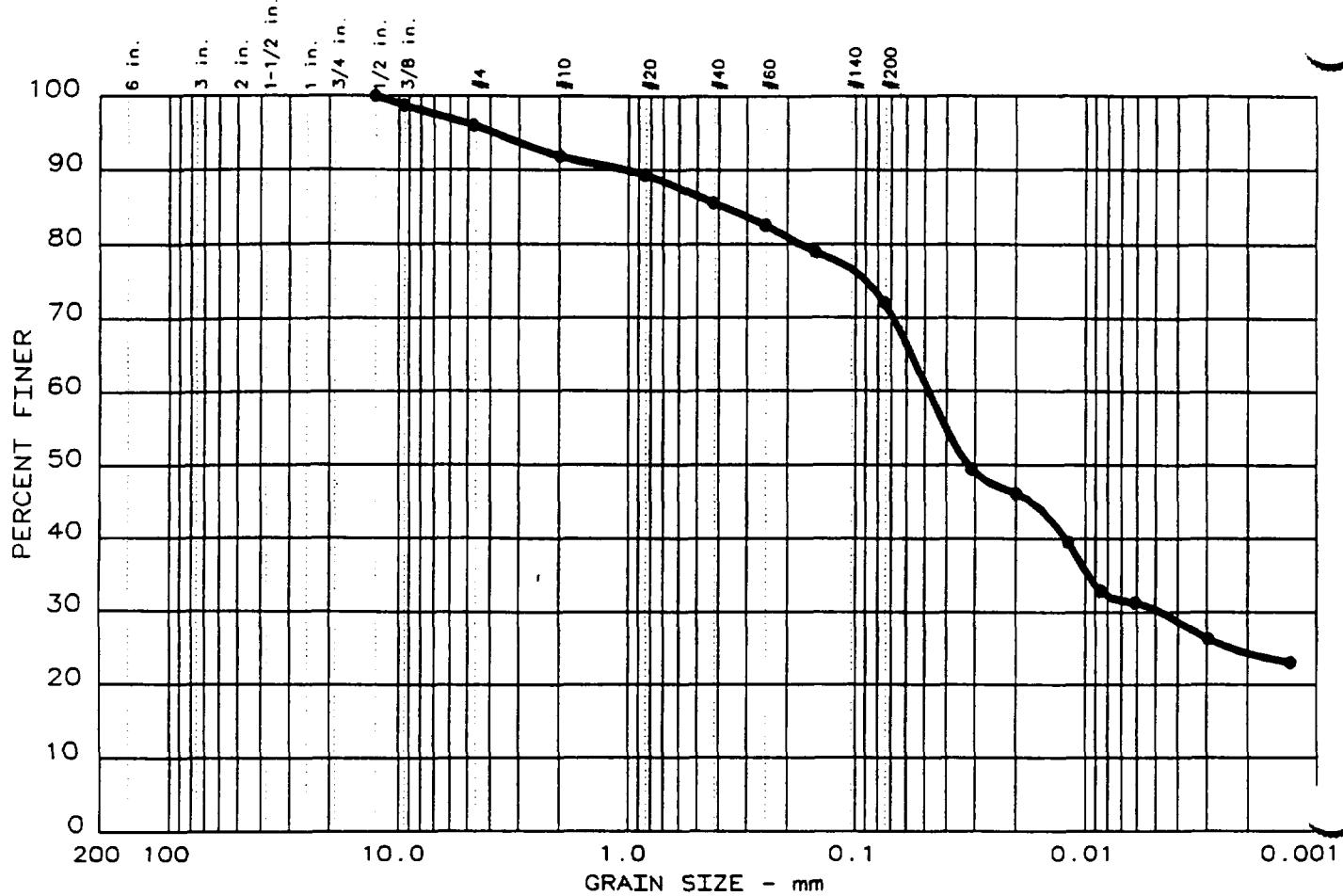
SILT = 61.0 % CLAY = 25.5

D5= 0.07 D60= 0.048 D50= 0.041

D0= 0.0100


Leroy Barker
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 18	0.0	4.0	23.9	41.7	30.4

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.38	0.05	0.03	0.005				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, WITH SAND	---	---

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: CREEK SECTION F S1	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
--	---

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 18

Date: 11/04/99
Project No.: 1999-00-0774
Project: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION F S1

Sample Description: SILT, WITH SAND

SCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Lg. No.:

Mechanical Analysis Data

Initial

Dry sample and tare = 199.87

Tare = 0.00

Sample weight = 199.87

Sample split on number 10 sieve

Split sample data:

Sample and tare = 55.74 Tare = 0 Sample weight = 55.74

Cumulative weight retained tare = 0

Tare for cumulative weight retained = 0

Sieve Cumul. Wt. Percent

retained finer

0.5 inches	0.00	100.0
0.375 inches	2.60	98.7
# 4	8.04	96.0
# 10	16.38	91.8
# 20	1.51	89.3
# 40	3.78	85.6
# 60	5.60	82.6
# 100	7.81	78.9
# 200	11.97	72.1

Hydrometer Analysis Data

Separation sieve is number 10

Percent -# 10 based on complete sample= 91.8

Weight of hydrometer sample: 58.84

Gross weight correction:

Moist weight & tare = 31.98

Dry weight & tare = 30.89

Tare = 11.29

Hygroscopic moisture= 5.6 %

Calculated biased weight= 60.72

Table of composite correction values:

Temp, deg C: 18.0 22.0

Comp. corr: - 8.0 - 8.0

Meniscus correction only= 0

Specific gravity of solids= 2.65

Specific gravity correction factor= 1.000

Drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	38.0	30.0	0.0139	38.0	10.1	0.0311	49.4
5.0	18.7	36.0	28.0	0.0139	36.0	10.4	0.0200	46.1
15.0	18.8	32.0	24.0	0.0139	32.0	11.0	0.0119	39.5
30.0	18.9	28.0	20.0	0.0138	28.0	11.7	0.0086	32.9
60.0	19.2	27.0	19.0	0.0138	27.0	11.9	0.0061	31.3
250.0	21.6	24.0	16.0	0.0134	24.0	12.4	0.0030	26.4
1440.0	18.0	22.0	14.0	0.0140	22.0	12.7	0.0013	23.1

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

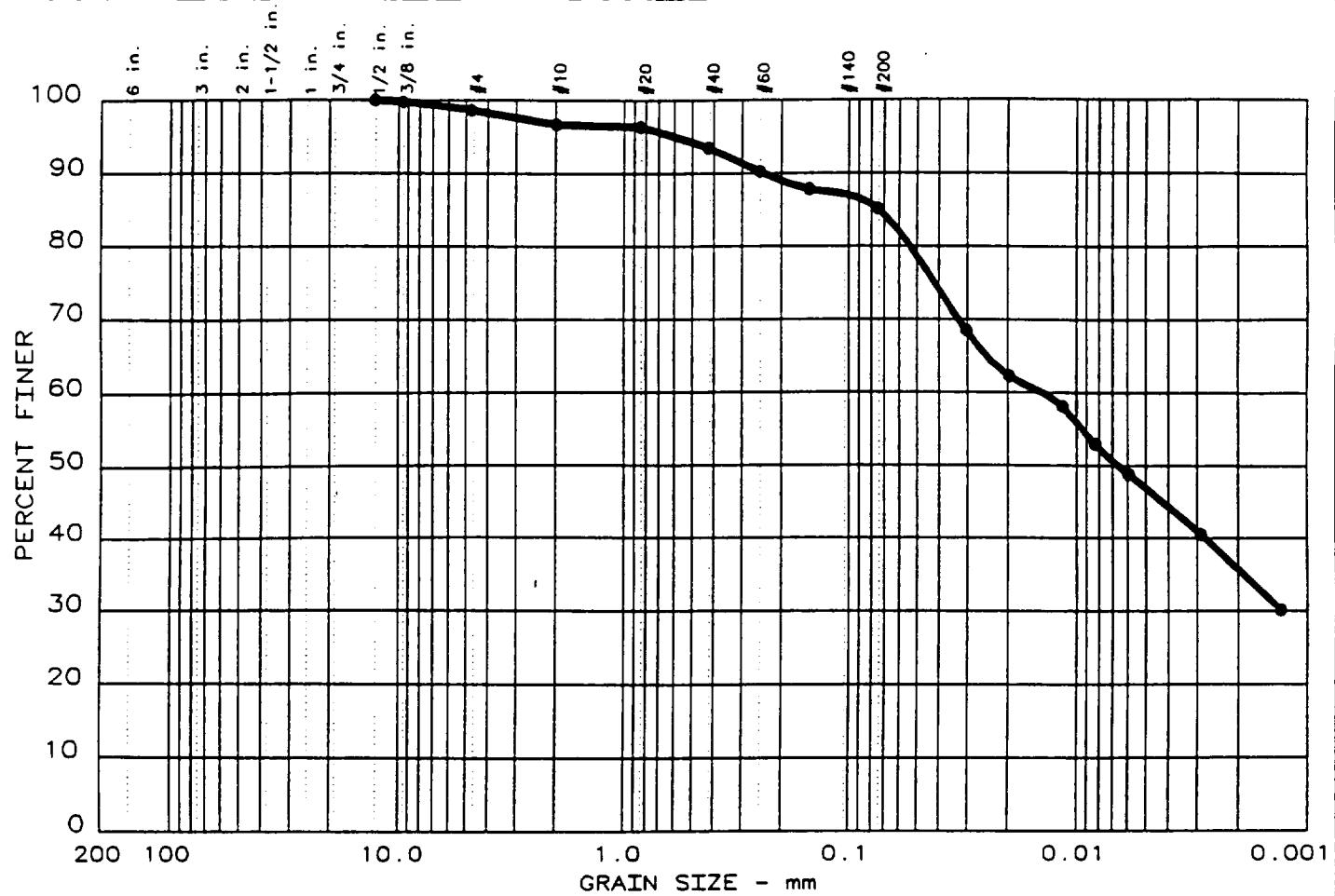
+ 3 in. = 0.0 % GRAVEL = 4.0 % SAND = 23.9

SILT = 41.7 % CLAY = 30.4

C- 0.38 D60= 0.048 D50= 0.032
0.0047


MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 3	0.0	1.4	13.4	38.3	46.9

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.07	0.01	0.01					

MATERIAL DESCRIPTION	USCS	AASHTO
● CLAY, LITTLE SAND	- - -	- - -

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: CREEK SECTION F S2

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 3

11/04/99
Object No.: 1999-00-0774
Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION F S2

Sample Description: CLAY, LITTLE SAND

CS Class: - - -

Liquid limit: - - -

SHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

Dry sample and tare = 62.60

Tare = 0.00

Dry sample weight = 62.60

Sample split on number 10 sieve

Total sample data:

Sample and tare = 46.55 Tare = 0 Sample weight = 46.55

Cumulative weight retained tare = 0

Tare for cumulative weight retained = 0

Sieve Cumul. Wt. Percent

retained finer

0.5 inches 0.00 100.0

0.375 inches 0.17 99.7

4 0.88 98.6

10 2.08 96.7

20 0.16 96.3

40 1.54 93.5

60 3.10 90.2

100 4.26 87.8

200 5.55 85.2

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample = 96.7

Weight of hydrometer sample = 50.15

Grossoscopic moisture correction:

Moist weight & tare = 25.09

Dry weight & tare = 24.12

Tare = 11.58

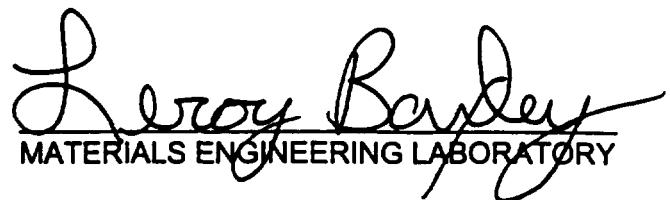
Hygroscopic moisture= 7.7 %
calculated biased weight= 48.15
table of composite correction values:
mp, deg C: 17.0 22.0
comp. corr: - 8.0 - 8.0
eniscus correction only= 0
specific gravity of solids= 2.65
specific gravity correction factor= 1.000
hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.6	41.0	33.0	0.0139	41.0	9.6	0.0304	68.5
5.0	18.6	38.0	30.0	0.0139	38.0	10.1	0.0197	62.3
15.0	18.7	36.0	28.0	0.0139	36.0	10.4	0.0115	58.2
30.0	18.9	33.5	25.5	0.0138	33.5	10.8	0.0083	53.0
60.0	19.0	31.5	23.5	0.0138	31.5	11.1	0.0060	48.8
250.0	21.3	27.5	19.5	0.0134	27.5	11.8	0.0029	40.5
1440.0	17.9	22.5	14.5	0.0140	22.5	12.6	0.0013	30.1

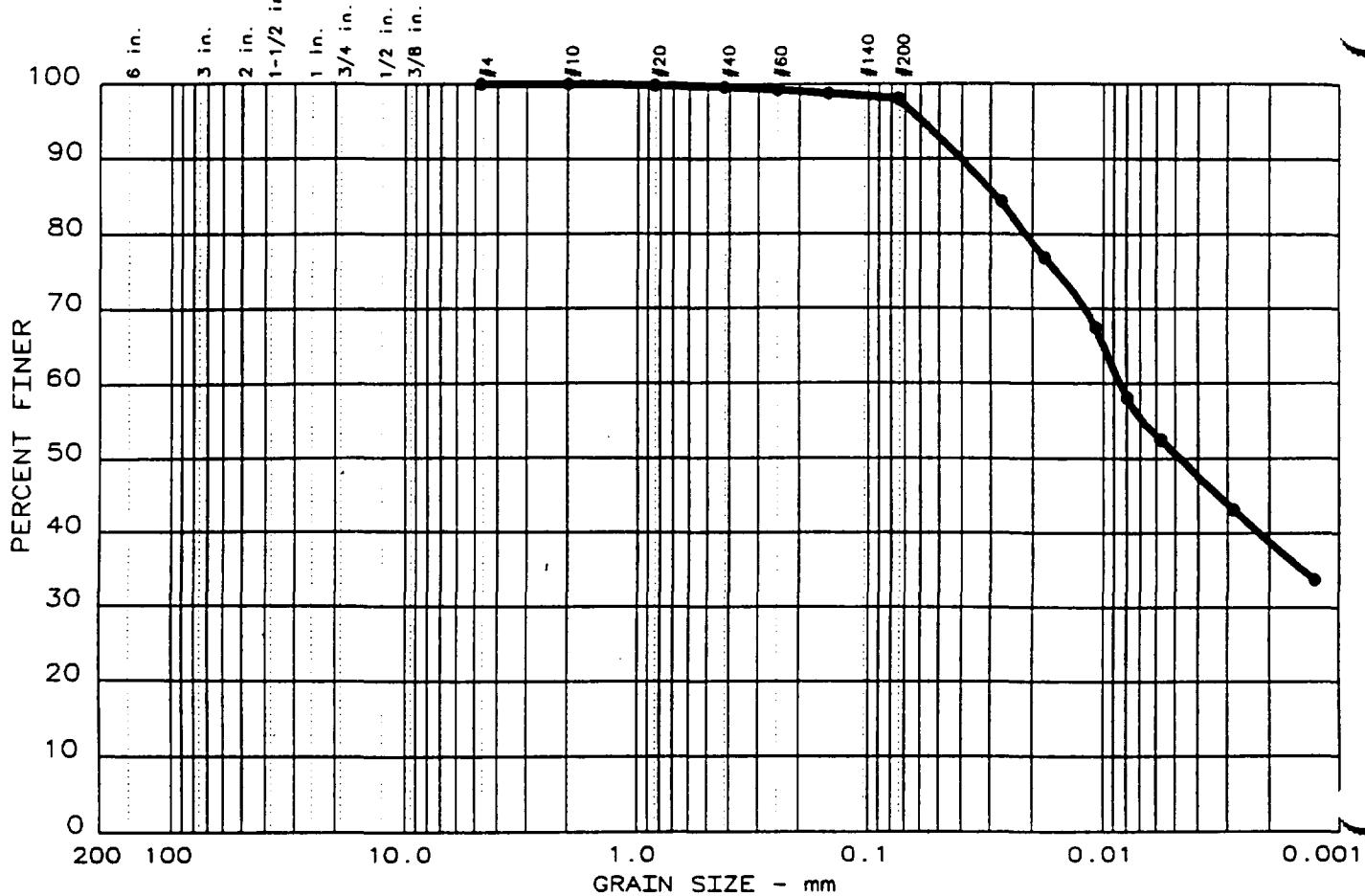
Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
+ 3 in. = 0.0 % GRAVEL = 1.4 % SAND = 13.4
SILT = 38.3 % CLAY = 46.9

35= 0.07 D60= 0.014 D50= 0.007


Leroy Bayley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 17	0.0	0.0	2.0		47.4		50.6	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.03	0.01	0.00					

MATERIAL DESCRIPTION	USCS	AASHTO
● CLAY, TRACE SAND	---	---

Project No.: 1999-00-0774
 Project: SOUTIA SAUGET AREA 1 PROJECT
 ● Location: CREEK SECTION F S3

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 17

Date: 11/04/99

Object No.: 1999-00-0774

Project: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: CREEK SECTION F S3

Sample Description: CLAY, TRACE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

Dry sample and tare= 108.61

Tare = 0.00

Dry sample weight = 108.61

Sample split on number 10 sieve

Dry sample data:

Sample and tare = 53.14 Tare = 0 Sample weight = 53.14

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve Cumul. Wt. Percent

retained finer

# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.07	99.9
# 40	0.22	99.6
# 60	0.42	99.2
# 100	0.67	98.7
# 200	1.06	98.0

Hydrometer Analysis Data

Separation sieve is number 10

Percent -# 10 based on complete sample= 100.0

Weight of hydrometer sample: 56.14

Hygroscopic moisture correction:

Moist weight & tare = 19.66

Dry weight & tare = 19.20

Tare = 10.43

Hygroscopic moisture= 5.2 %

Calculated biased weight= 53.34

able of composite correction values:

Temp, deg C: 17.0 21.0

Temp. corr: - 8.0 - 8.0

scus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

ydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	53.0	45.0	0.0139	53.0	7.6	0.0270	84.4
5.0	18.7	49.0	41.0	0.0139	49.0	8.3	0.0178	76.9
15.0	18.7	44.0	36.0	0.0139	44.0	9.1	0.0108	67.5
30.0	18.8	39.0	31.0	0.0139	39.0	9.9	0.0080	58.1
60.0	19.0	36.0	28.0	0.0138	36.0	10.4	0.0057	52.5
250.0	21.0	31.0	23.0	0.0135	31.0	11.2	0.0029	43.1
1440.0	17.8	26.0	18.0	0.0140	26.0	12.0	0.0013	33.7

Fractional Components

avel/Sand based on #4 sieve

and/Fines based on #200 sieve

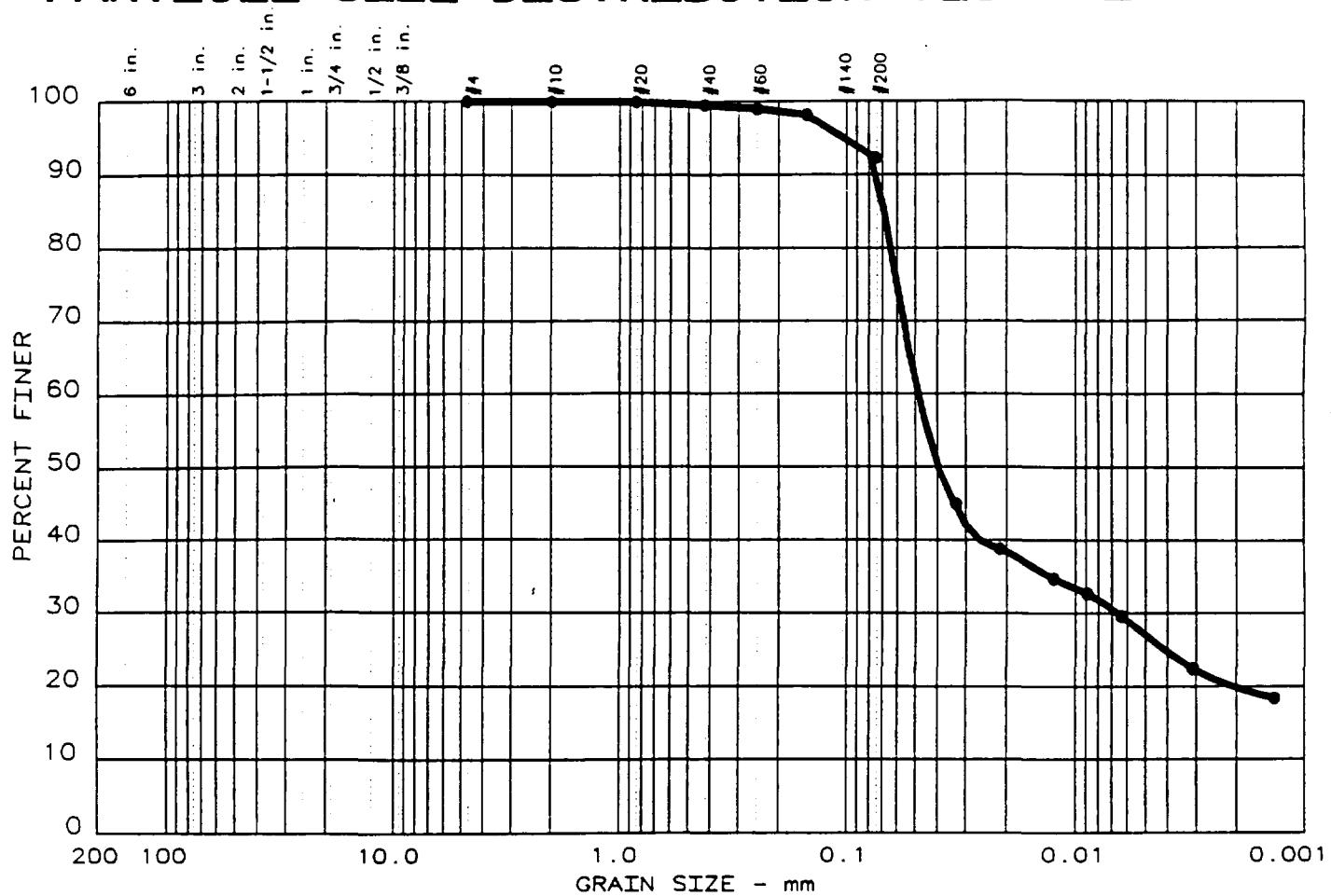
+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 2.0

SILT = 47.4 % CLAY = 50.6

35= 0.03 D60= 0.009 D50= 0.005


Leroy Baxley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 13	0.0	0.0	7.8	65.2	27.0

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.07	0.05	0.04	0.007				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	---	---

Project No.: 1999-00-0774
 Project: SOUTIA SAUGET AREA 1 PROJECT
 ● Location: BPL-ESED-S FD

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 13

: 11/04/99

Object No.: 1999-00-0774

Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: BPL-ESED-S FD

Sample Description: SILT, TRACE SAND

SCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

marks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

y sample and tare= 49.00

re = 0.00

y sample weight = 49.00

for cumulative weight retained= 0

	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.02	100.0
# 40	0.25	99.5
# 60	0.51	99.0
# 100	0.91	98.1
# 200	3.80	92.2

Hydrometer Analysis Data

paration sieve is number 10

rcent -# 10 based on complete sample= 100.0

ight of hydrometer sample: 53.06

grosscopic moisture correction:

Moist weight & tare = 31.18

Dry weight & tare = 29.67

Tare = 11.45

Hygroscopic moisture= 8.3 %

lculated biased weight= 49.00

ble of composite correction values:

Temp, deg C: 17.0 21.0

Comp. corr: - 8.0 - 8.0

discus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.4	30.0	22.0	0.0139	30.0	11.4	0.0332	44.9
5.0	18.5	27.0	19.0	0.0139	27.0	11.9	0.0214	38.8
15.0	18.5	25.0	17.0	0.0139	25.0	12.2	0.0125	34.7
30.0	18.5	24.0	16.0	0.0139	24.0	12.4	0.0089	32.7
60.0	18.5	22.5	14.5	0.0139	22.5	12.6	0.0064	29.6
250.0	20.5	19.0	11.0	0.0136	19.0	13.2	0.0031	22.4
1440.0	17.5	17.0	9.0	0.0141	17.0	13.5	0.0014	18.4

Fractional Components

Gravel/Sand based on #4 sieve

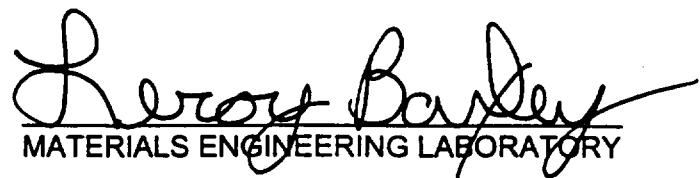
Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 7.8

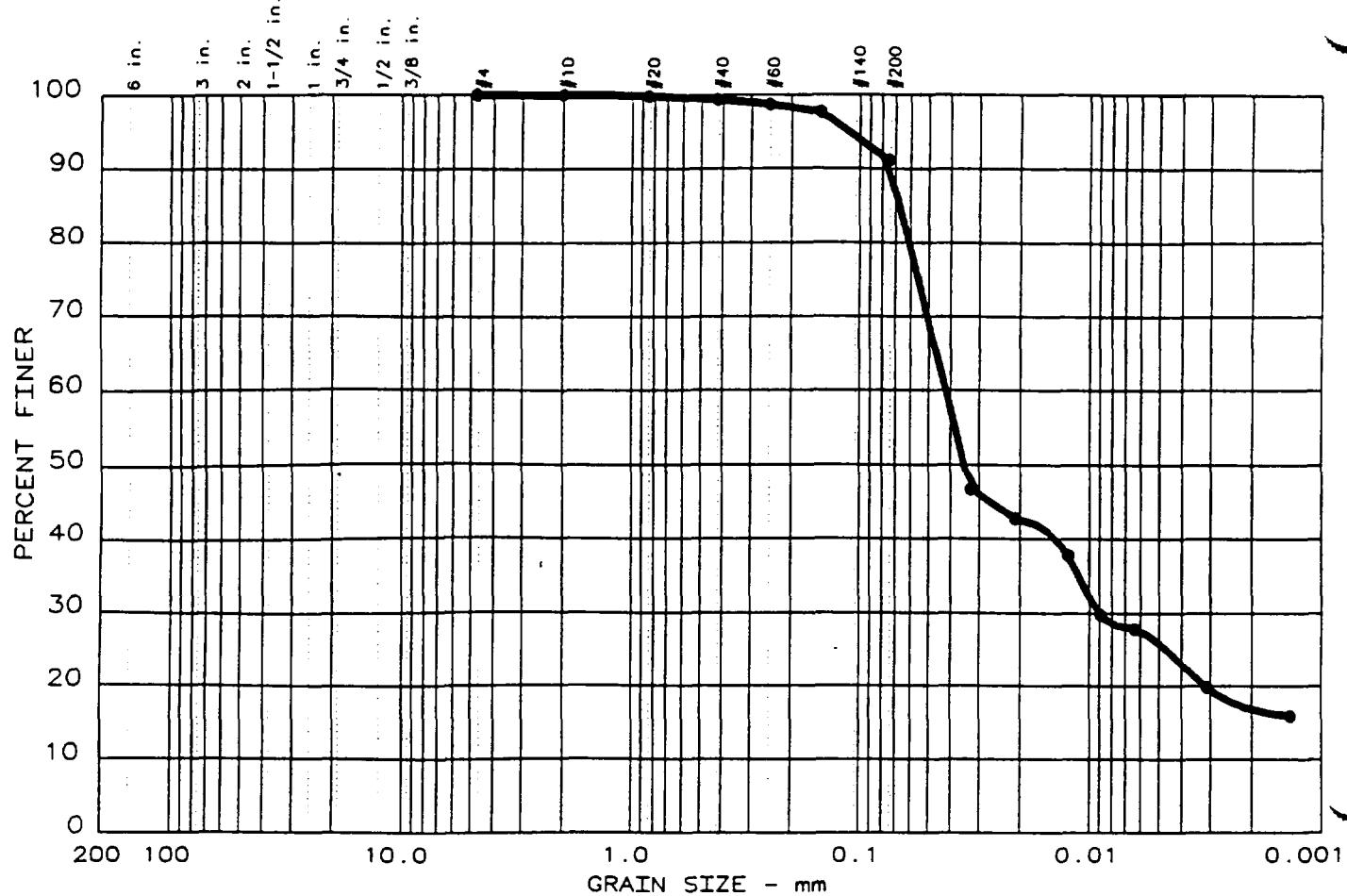
SILT = 65.2 % CLAY = 27.0

S= 0.07 D60= 0.048 D50= 0.040

O= 0.0066


Leroy Barker
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 15	0.0	0.0	8.9		65.3		25.8	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.07	0.04	0.03	0.009				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	---	---

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: BPL-ESED-S1

Remarks:

CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 15

11/04/99

Object No.: 1999-00-0774

Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: BPL-ESED-S1

Sample Description: SILT, TRACE SAND

SCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

Weight sample and tare= 160.28

Tare = 0.00

Weight sample = 160.28

Sample split on number 10 sieve

Initial sample data:

Sample and tare = 50.31 Tare = 0 Sample weight = 50.31

Cumulative weight retained tare= 0

Tare for cumulative weight retained= 0

Sieve Cumul. Wt. Percent

retained finer

# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.09	99.8
# 40	0.33	99.3
# 60	0.66	98.7
# 100	1.17	97.7
# 200	4.47	91.1

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample= 100.0

Weight of hydrometer sample: 52.96

Hygroscopic moisture correction:

Moist weight & tare = 29.67

Dry weight & tare = 28.75

Tare = 11.30

Hygroscopic moisture= 5.3 %

Calculated biased weight= 50.31

able of composite correction values:

Temp, deg C: 17.0 21.0

mp. corr: - 8.0 - 8.0

scus correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

ydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.4	31.5	23.5	0.0139	31.5	11.1	0.0328	46.7
5.0	18.4	29.5	21.5	0.0139	29.5	11.5	0.0211	42.7
15.0	18.5	27.0	19.0	0.0139	27.0	11.9	0.0124	37.8
30.0	18.5	23.0	15.0	0.0139	23.0	12.5	0.0090	29.8
60.0	18.6	22.0	14.0	0.0139	22.0	12.7	0.0064	27.8
250.0	20.6	18.0	10.0	0.0135	18.0	13.3	0.0031	19.9
1440.0	17.6	16.0	8.0	0.0141	16.0	13.7	0.0014	15.9

Fractional Components

Gravel/Sand based on #4 sieve

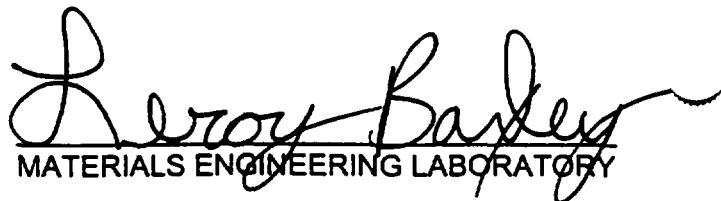
and/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 8.9

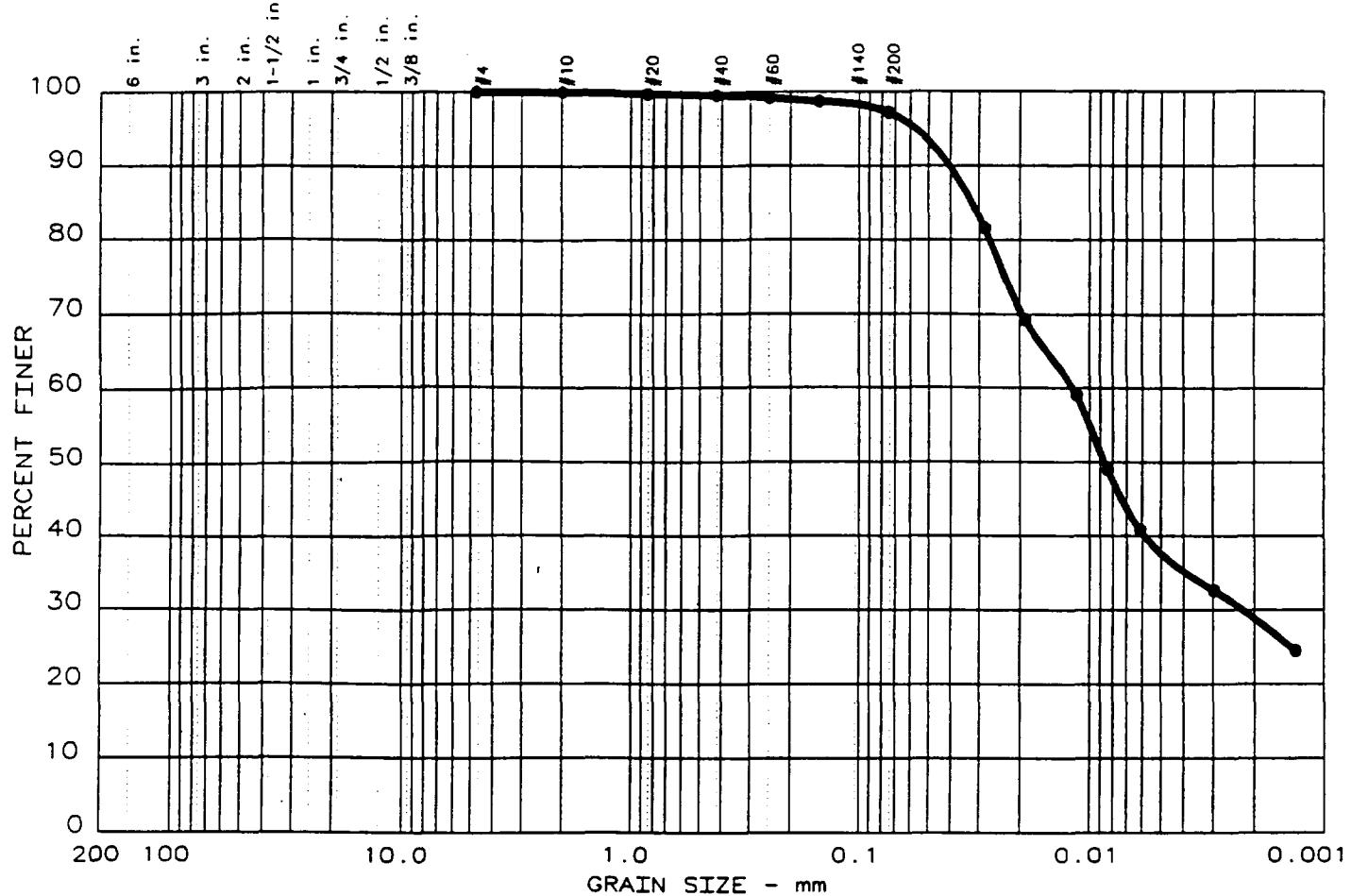
SILT = 65.3 % CLAY = 25.8

35= 0.07 D60= 0.042 D50= 0.035

30= 0.0091


Leroy Basley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 16	0.0	0.0	2.8	59.6	37.6

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	- - -	0.03	0.01	0.01	0.002			

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: BPL-ESED-S2

Remarks:
 CLIENT: O'BRINE AND GERE
 ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
 THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 16

: 11/04/99
roject No.: 1999-00-0774
roject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

ocation of Sample: BPL-ESED-S2
ample Description: SILT, TRACE SAND
GCS Class: - - -
ASHTO Class: - - -

Liquid limit: - - -
Plasticity index: - - -

Notes

emarks: CLIENT: O'BRINE AND GERE ENGINEERS, INC.

ig. No.:

Mechanical Analysis Data

Initial

ry sample and tare= 132.26
are = 0.00
sample weight = 132.26
le split on number 10 sieve
plit sample data:

Sample and tare = 49.03 Tare = 0 Sample weight = 49.03
Cumulative weight retained tare= 0

are for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.11	99.8
# 40	0.22	99.6
# 60	0.40	99.2
# 100	0.63	98.7
# 200	1.38	97.2

Hydrometer Analysis Data

eparation sieve is number 10
ercent -# 10 based on complete sample= 100.0
eight of hydrometer sample: 52.09
ygroscopic moisture correction:
Moist weight & tare = 20.69
Dry weight & tare = 20.11
Tare = 10.82
Hygroscopic moisture= 6.2 %
ulated biased weight= 49.03

ble of composite correction values:

Temp, deg C: 17.0 22.0

mp. corr: - 8.0 - 8.0

us correction only= 0

pecific gravity of solids= 2.65

pecific gravity correction factor= 1.000

drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	48.0	40.0	0.0139	48.0	8.4	0.0285	81.6
5.0	18.7	42.0	34.0	0.0139	42.0	9.4	0.0190	69.3
15.0	18.8	37.0	29.0	0.0139	37.0	10.2	0.0114	59.1
30.0	18.8	32.0	24.0	0.0139	32.0	11.0	0.0084	49.0
60.0	18.9	28.0	20.0	0.0138	28.0	11.7	0.0061	40.8
250.0	21.2	24.0	16.0	0.0134	24.0	12.4	0.0030	32.6
1440.0	17.8	20.0	12.0	0.0140	20.0	13.0	0.0013	24.5

Fractional Components

avel/Sand based on #4 sieve

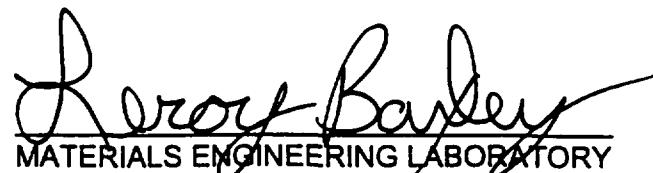
nd/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 2.8

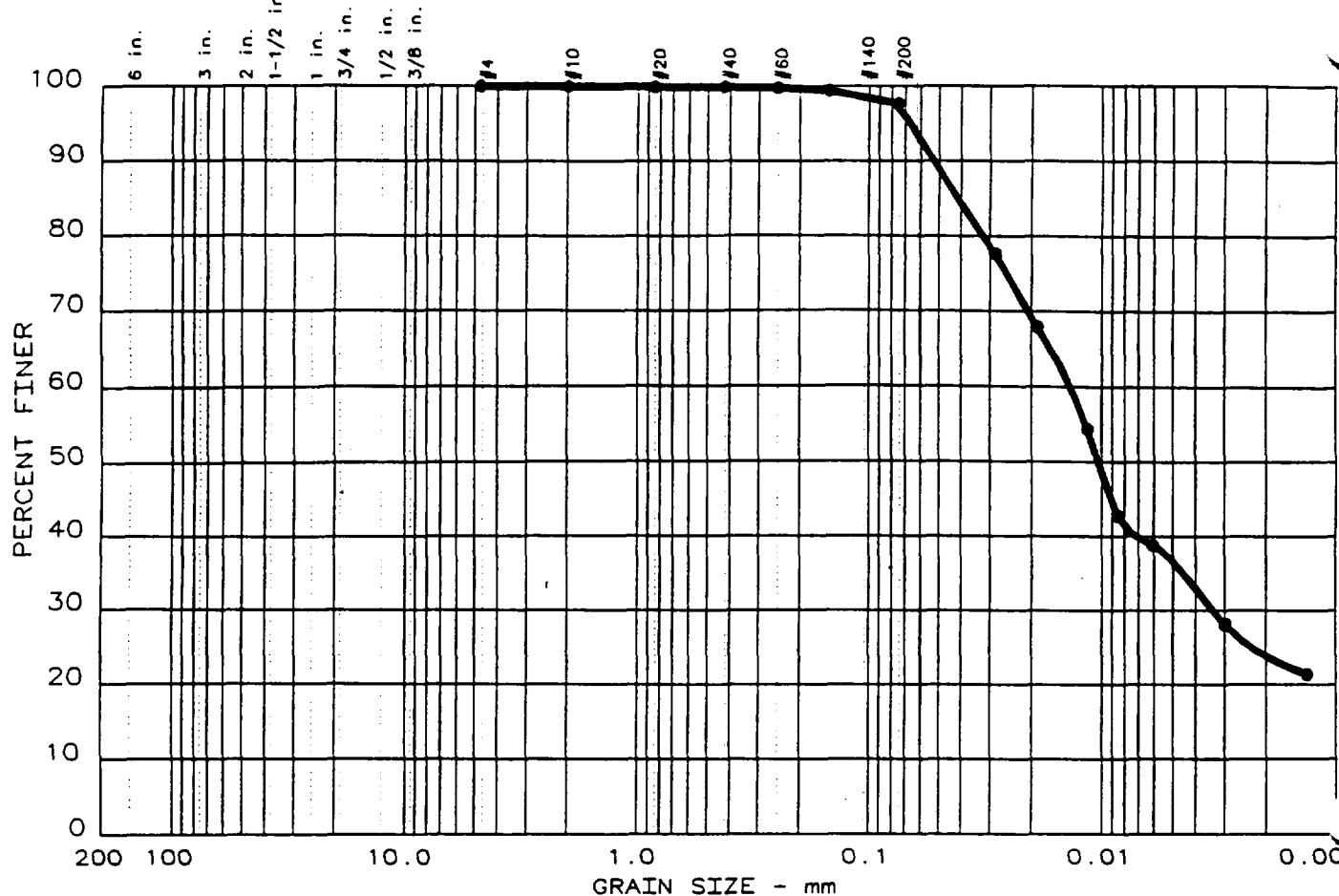
SILT = 59.6 % CLAY = 37.6

5= 0.03 D60= 0.012 D50= 0.009

0= 0.0022


Leroy Bayley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 14	0.0	0.0	2.4	61.0	36.6

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.04	0.01	0.01	0.003				

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	- - -	- - -

Project No.: 1999-00-0774	Remarks:
Project: SOLUTIA SAUGET AREA 1 PROJECT	
● Location: BPL-ESED-S3	CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
<hr/>	
Date: 11/04/99	
PARTICLE SIZE DISTRIBUTION TEST REPORT	
THOMPSON ENGINEERING	

Remarks:

CLIENT: O'BRIEN AND GERE
ENGINEERS, INC.

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Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 14

11/04/99

Project No.: 1999-00-0774

Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: BPL-ESED-S3

Sample Description: SILT, TRACE SAND

CS Class: - - -

Liquid limit: - - -

SHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

y sample and tare=	51.50	
re	= 0.00	
y sample weight =	51.50	
for cumulative weight retained= 0		
ieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.03	99.9
# 40	0.06	99.9
# 60	0.11	99.8
# 100	0.31	99.4
# 200	1.24	97.6

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample= 100.0

Weight of hydrometer sample: 53.75

Hygroscopic moisture correction:

Moist weight & tare = 26.11

Dry weight & tare = 25.50

Tare = 11.57

Hygroscopic moisture= 4.4 %

Calculated biased weight= 51.50

Table of composite correction values:

Temp, deg C: 18.0 22.0

Comp. corr: - 8.0 - 8.0
scus correction only= 0
ific gravity of solids= 2.65
pecific gravity correction factor= 1.000
drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	48.0	40.0	0.0139	48.0	8.4	0.0285	77.7
5.0	18.7	43.0	35.0	0.0139	43.0	9.2	0.0189	68.0
15.0	18.7	36.0	28.0	0.0139	36.0	10.4	0.0115	54.4
30.0	18.9	30.0	22.0	0.0138	30.0	11.4	0.0085	42.7
60.0	19.1	28.0	20.0	0.0138	28.0	11.7	0.0061	38.8
250.0	21.5	22.5	14.5	0.0134	22.5	12.6	0.0030	28.2
1440.0	18.0	19.0	11.0	0.0140	19.0	13.2	0.0013	21.4

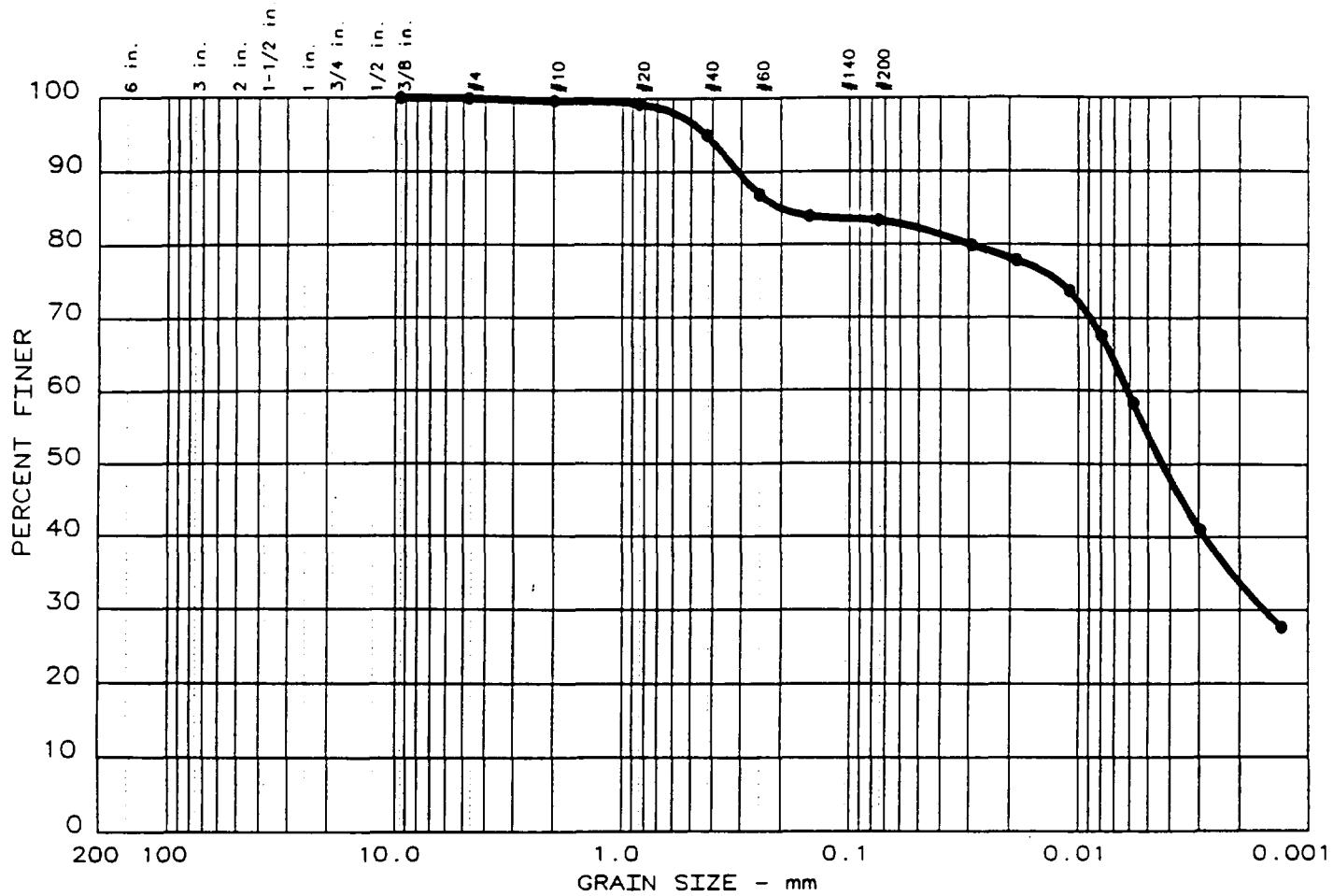
Fractional Components

Gravel/Sand based on #4 sieve
Sand/Fines based on #200 sieve
+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 2.4
SILT = 61.0 % CLAY = 36.6

D5= 0.04 D60= 0.014 D50= 0.010
D30= 0.0033


Leroy Basley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND		% SILT		% CLAY	
● 1	0.0	0.0	16.7		29.3		54.0	

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● - - -	- - -	0.20	0.01	0.00	0.002				

MATERIAL DESCRIPTION	USCS	AASHTO
● CLAY, WITH SAND	- - -	- - -

Project No.: 1999-00-0774	Remarks:
Project: SOUTIA SAUGET AREA 1 PROJECT	CLIENT: O'BRIEN AND GERE
● Location: SITE M	ENGINEERS, INC.

Remarks:

CLIENT: O'BRIEN AND GERE
ENGINEERS, INC.

Date: 11/03/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. 1

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 1

: 11/03/99
ject No.: 1999-00-0774
roject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

ocation of Sample: SITE M
ample Description: CLAY, WITH SAND
SCS Class: - - -
ASHTO Class: - - -

Liquid limit: - - -
Plasticity index: - - -

Notes

emarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

ig. No.: 1

Mechanical Analysis Data

Initial

ry sample and tare= 81.87

are = 0.00

ry sample weight = 81.87

le split on number 10 sieve

t sample data:

sample and tare = 48.66 Tare = 0 Sample weight = 48.66

Cumulative weight retained tare= 0

are for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
0.375 inches	0.00	100.0
# 4	0.03	100.0
# 10	0.28	99.7
# 20	0.21	99.2
# 40	2.29	95.0
# 60	6.25	86.9
# 100	7.71	83.9
# 200	7.99	83.3

Hydrometer Analysis Data

eparation sieve is number 10

ercent -# 10 based on complete sample= 99.7

eight of hydrometer sample: 51.09

ygroscopic moisture correction:

Moist weight & tare = 25.72

Dry weight & tare = 25.03

Tare = 11.24

"ygroscopic moisture= 5.0 %

Calculated biased weight = 48.82
Table of composite correction values:

Temp, deg C: 17.0 20.0

App. corr: - 8.0 - 8.0

SCS correction only = 0

Specific gravity of solids = 2.65

Specific gravity correction factor = 1.000

Drometer type: 152H Effective depth L = 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.5	47.0	39.0	0.0141	47.0	8.6	0.0292	79.9
5.0	17.5	46.0	38.0	0.0141	46.0	8.8	0.0186	77.8
15.0	17.6	44.0	36.0	0.0141	44.0	9.1	0.0109	73.7
30.0	17.7	41.0	33.0	0.0140	41.0	9.6	0.0079	67.6
60.0	18.1	36.5	28.5	0.0140	36.5	10.3	0.0058	58.4
250.0	19.6	28.0	20.0	0.0137	28.0	11.7	0.0030	41.0
1440.0	18.2	21.5	13.5	0.0140	21.5	12.8	0.0013	27.7

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 16.7

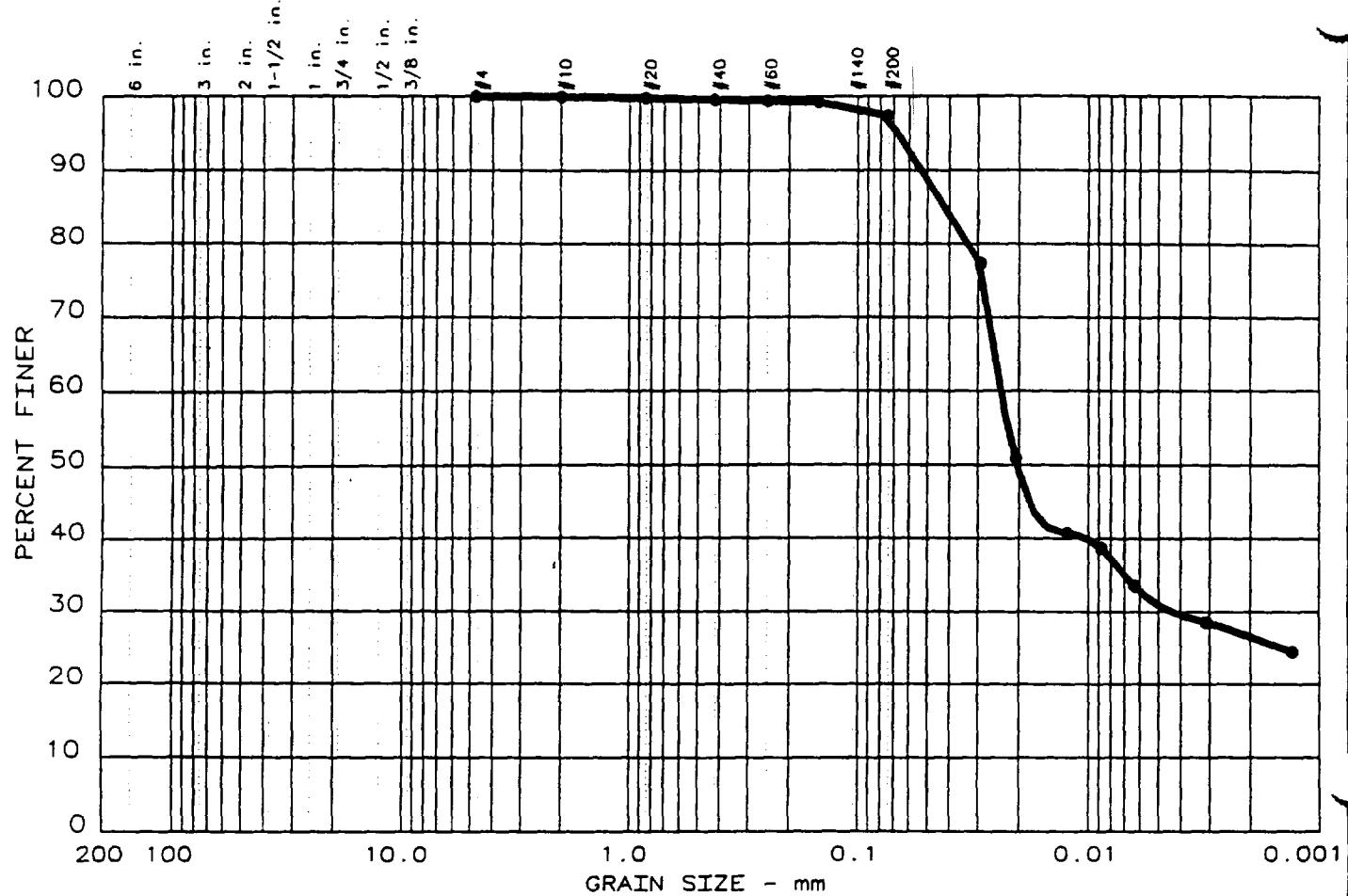
SILT = 29.3 % CLAY = 54.0

S = 0.20 D60 = 0.006 D50 = 0.004

O = 0.0015

Leroy Baden
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
• 12	0.0	0.0	2.7	66.4	30.9

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
• ---	---	0.04	0.02	0.02	0.004				

MATERIAL DESCRIPTION	USCS	AASHTO
• SILT, TRACE SAND	---	---

Project No.: 1999-00-0774 Project: SOLUTIA SAUGET AREA 1 PROJECT • Location: RA 1 - S1	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Date: 11/04/99

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PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 12

: 11/04/99
Object No.: 1999-00-0774
Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: RA 1 - S1
Sample Description: SILT, TRACE SAND
GCS Class: - - -
ASHTO Class: - - -

Liquid limit: - - -
Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

Fig. No.:

Mechanical Analysis Data

Initial

My sample and tare= 218.59
Tare = 0.00
My sample weight = 218.59
We split on number 10 sieve
of sample data:

Sample and tare = 49.1 Tare = 0 Sample weight = 49.1

Cumulative weight retained tare= 0
Tare for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.12	99.9
# 20	0.07	99.8
# 40	0.18	99.6
# 60	0.25	99.4
# 100	0.35	99.2
# 200	1.28	97.3

Hydrometer Analysis Data

Separation sieve is number 10
Percent -# 10 based on complete sample= 99.9
Weight of hydrometer sample: 50.79
Hygroscopic moisture correction:
Moist weight & tare = 27.22
Dry weight & tare = 26.69
Tare = 11.32
Hygroscopic moisture= 3.4 %
Calculated biased weight= 49.12

Table of composite correction values:

Temp, deg C: 17.0 19.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

specific gravity of solids= 2.65

specific gravity correction factor= 1.000

hydrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.8	46.0	38.0	0.0140	46.0	8.8	0.0293	77.4
5.0	17.9	33.0	25.0	0.0140	33.0	10.9	0.0207	50.9
15.0	17.8	28.0	20.0	0.0140	28.0	11.7	0.0124	40.7
30.0	17.9	27.0	19.0	0.0140	27.0	11.9	0.0088	38.7
60.0	18.0	24.5	16.5	0.0140	24.5	12.3	0.0063	33.6
250.0	18.8	22.0	14.0	0.0139	22.0	12.7	0.0031	28.5
1440.0	18.6	20.0	12.0	0.0139	20.0	13.0	0.0013	24.4

Fractional Components

Gravel/Sand based on #4 sieve

Sand/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 2.7

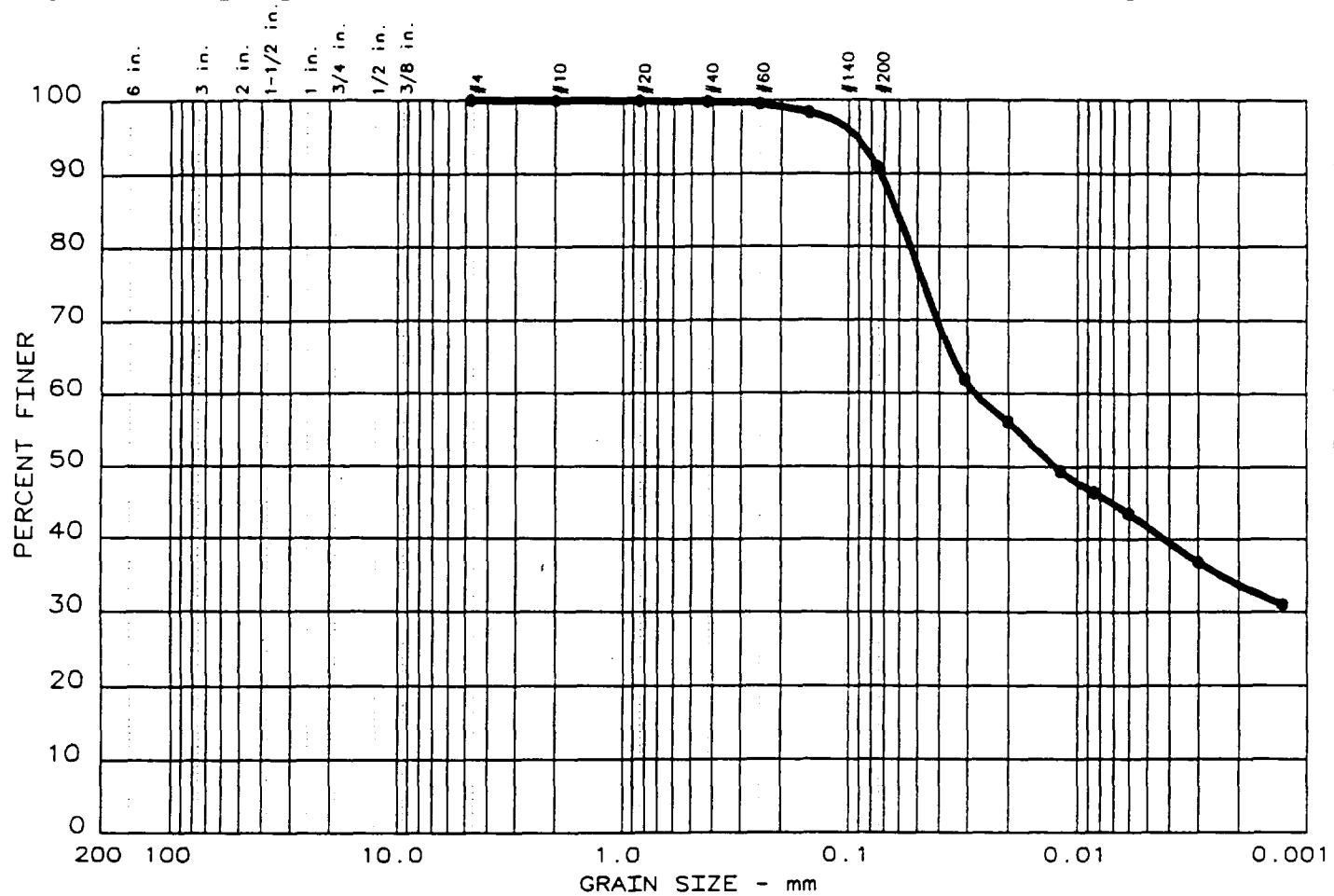
SILT = 66.4 % CLAY = 30.9

D5= 0.04 D60= 0.024 D50= 0.020

D0= 0.0043


Leroy Basley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 11	0.0	0.0	9.1	49.2	41.7

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.06	0.03	0.01					

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	---	---

Project No.: 1999-00-0774 Project: SOUTIA SAUGET AREA 1 PROJECT ● Location: RA 1 - S2	Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.
---	---

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 11

: 11/04/99

- ject No.: 1999-00-0774

roject: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

ocation of Sample: RA 1 - S2

ample Description: SILT, TRACE SAND

GCS Class: - - -

Liquid limit: - - -

ASHTO Class: - - -

Plasticity index: - - -

Notes

marks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

ig. No.:

Mechanical Analysis Data

Initial

ry sample and tare= 51.65

are = 0.00

ry sample weight = 51.65

` for cumulative weight retained= 0

eve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.02	100.0
# 40	0.08	99.8
# 60	0.25	99.5
# 100	0.88	98.3
# 200	4.69	90.9

Hydrometer Analysis Data

eparation sieve is number 10

ercent -# 10 based on complete sample= 100.0

eight of hydrometer sample: 53.68

ygroscopic moisture correction:

Moist weight & tare = 23.47

Dry weight & tare = 23.02

Tare = 11.57

Hygroscopic moisture= 3.9 %

alculated biased weight= 51.65

able of composite correction values:

Temp, deg C: 17.0 19.0

Comp. corr: - 8.0 - 8.0

niscus correction only= 0

fic gravity of solids= 2.65

fic gravity correction factor= 1.000

drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.7	40.0	32.0	0.0140	40.0	9.7	0.0310	62.0
5.0	17.7	37.0	29.0	0.0140	37.0	10.2	0.0201	56.1
15.0	17.7	33.5	25.5	0.0140	33.5	10.8	0.0119	49.4
30.0	17.8	32.0	24.0	0.0140	32.0	11.0	0.0085	46.5
60.0	18.0	30.5	22.5	0.0140	30.5	11.3	0.0061	43.6
250.0	18.8	27.0	19.0	0.0139	27.0	11.9	0.0030	36.8
1440.0	18.6	24.0	16.0	0.0139	24.0	12.4	0.0013	31.0

Fractional Components

avel/Sand based on #4 sieve

nd/Fines based on #200 sieve

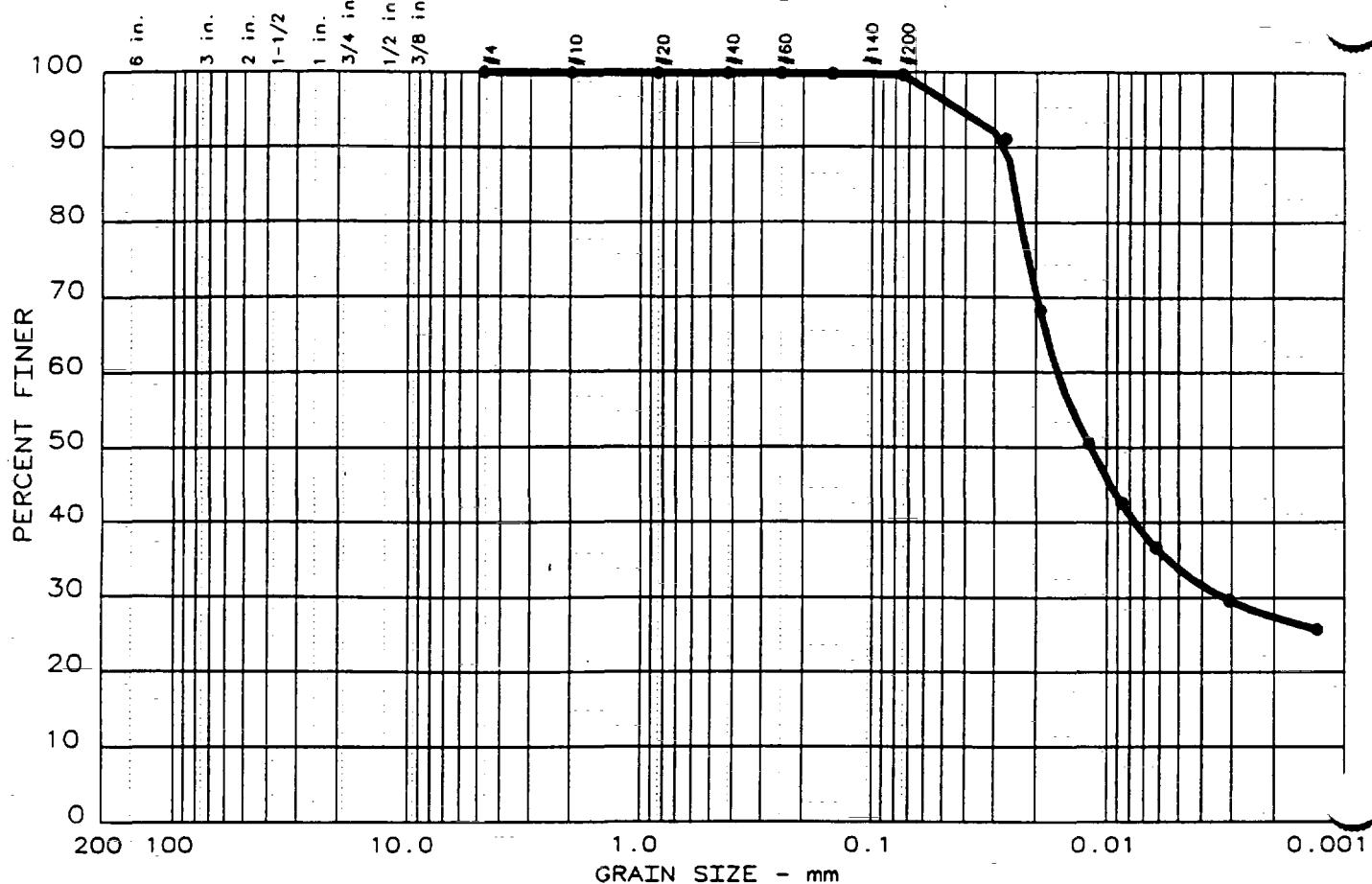
+ 3 in. = 0.0 % GRAVEL = 0.0, % SAND = 9.1

SILT = 49.2 % CLAY = 41.7

5= 0.06 D60= 0.028 D50= 0.013


Leroy Bayley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
●	10	0.0	0.0	0.4	65.9

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
●	- - -	- - -	0.02	0.02	0.01	0.003			

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT	- - -	- - -

Project No.: 1999-00-0774
 Project: SOLUTIA SAUGET AREA 1 PROJECT
 ● Location: RA 2 - S1

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

267A-384

PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 10

: 11/04/99

Object No.: 1999-00-0774

Object: SOUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: RA 2 - S1

Sample Description: SILT

CS Class: - - -

Liquid limit: - - -

SHTO Class: - - -

Plasticity index: - - -

Notes

Remarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

g. No.:

Mechanical Analysis Data

Initial

dry sample and tare=	50.50	
re	= 0.00	
sample weight =	50.50	
for cumulative weight retained= 0		
ieve	Cumul. Wt.	Percent
	retained	finer
# 4	0.00	100.0
# 10	0.00	100.0
# 20	0.02	100.0
# 40	0.04	99.9
# 60	0.07	99.9
# 100	0.11	99.8
# 200	0.18	99.6

Hydrometer Analysis Data

Preparation sieve is number 10

Percent -# 10 based on complete sample= 100.0

Weight of hydrometer sample: 52.07

Hygroscopic moisture correction:

Moist weight & tare = 26.59

Dry weight & tare = 26.13

Tare = 11.31

Hygroscopic moisture= 3.1 %

Calculated biased weight= 50.50

Table of composite correction values:

Temp, deg C: 17.0 19.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

ific gravity of solids= 2.65

ecific gravity correction factor= 1.000

drometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	17.8	54.0	46.0	0.0140	54.0	7.4	0.0271	91.1
5.0	17.7	42.5	34.5	0.0140	42.5	9.3	0.0192	68.3
15.0	17.7	33.5	25.5	0.0140	33.5	10.8	0.0119	50.5
30.0	17.7	29.5	21.5	0.0140	29.5	11.5	0.0087	42.6
60.0	18.0	26.5	18.5	0.0140	26.5	11.9	0.0062	36.6
250.0	18.9	23.0	15.0	0.0138	23.0	12.5	0.0031	29.7
1440.0	18.6	21.0	13.0	0.0139	21.0	12.9	0.0013	25.7

Fractional Components

avel/Sand based on #4 sieve

nd/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 0.4

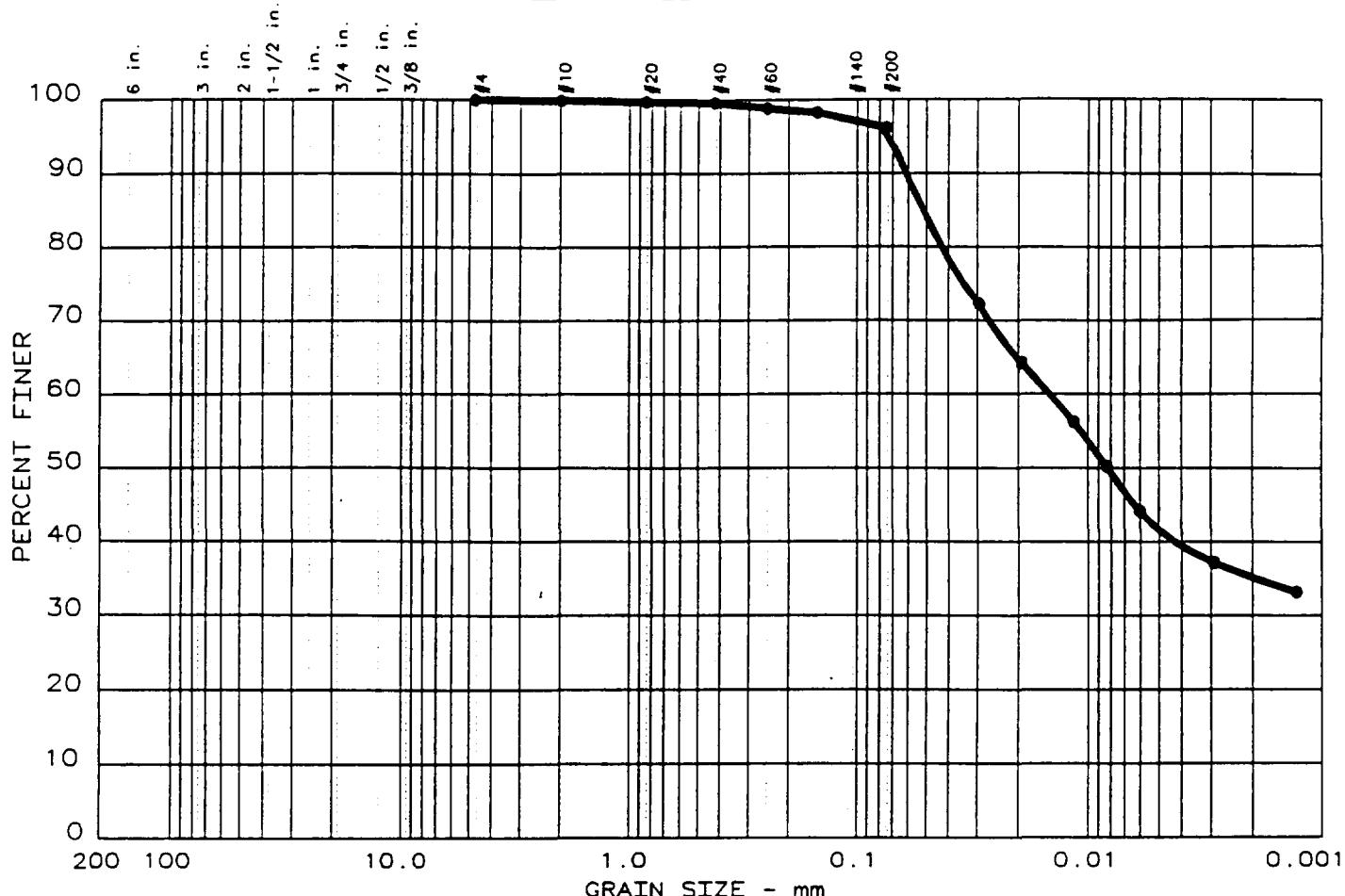
SILT = 65.9 % CLAY = 33.7

= 0.02 D60= 0.016 D50= 0.012

= 0.0032


Harry Basley
MATERIALS ENGINEERING LABORATORY

PARTICLE SIZE DISTRIBUTION TEST REPORT



Test	% +3"	% GRAVEL	% SAND	% SILT	% CLAY
● 2	0.0	0.0	3.9	54.5	41.6

LL	PI	D ₈₅	D ₆₀	D ₅₀	D ₃₀	D ₁₅	D ₁₀	C _c	C _u
● ---	---	0.05	0.01	0.01					

MATERIAL DESCRIPTION	USCS	AASHTO
● SILT, TRACE SAND	---	---

Project No.: 1999-00-0774
 Project: SOUTIA SAUGET AREA 1 PROJECT
 ● Location: RA2 - S2

Remarks:
 CLIENT: O'BRIEN AND GERE
 ENGINEERS, INC.

Date: 11/04/99

267A-387

PARTICLE SIZE DISTRIBUTION TEST REPORT
THOMPSON ENGINEERING

Figure No. _____

GRAIN SIZE DISTRIBUTION TEST DATA

Test No.: 2

: 11/04/99
ject No.: 1999-00-0774
roject: SOLUTIA SAUGET AREA 1 PROJECT

Sample Data

Location of Sample: RA2 - S2
ample Description: SILT, TRACE SAND
SCS Class: - - -
ASHTO Class: - - -

Liquid limit: - - -

Plasticity index: - - -

Notes

emarks: CLIENT: O'BRIEN AND GERE ENGINEERS, INC.

ig. No.:

Mechanical Analysis Data

Initial

ry sample and tare= 109.92
are = 0.00
ry sample weight = 109.92
mple split on number 10 sieve
t sample data:

Sample and tare = 49.74 Tare = 0 Sample weight = 49.74

Cumulative weight retained tare= 0

are for cumulative weight retained= 0

Sieve	Cumul. Wt. retained	Percent finer
# 4	0.00	100.0
# 10	0.14	99.9
# 20	0.08	99.7
# 40	0.15	99.6
# 60	0.52	98.8
# 100	0.81	98.2
# 200	1.86	96.1

Hydrometer Analysis Data

eparation sieve is number 10
ercent -# 10 based on complete sample= 99.9
eight of hydrometer sample: 51.76
ygroscopic moisture correction:
Moist weight & tare = 39.94
Dry weight & tare = 38.83
Tare = 11.56
Hygroscopic moisture= 4.1 %
alculated biased weight= 49.80

able of composite correction values:

Temp, deg C: 17.0 22.0

Comp. corr: - 8.0 - 8.0

scus correction only= 0

ific gravity of solids= 2.65

pecific gravity correction factor= 1.000

idrometer type: 152H Effective depth L= 16.294964 - 0.164 x Rm

Elapsed time, min	Temp, deg C	Actual reading	Corrected reading	K	Rm	Eff. depth	Diameter mm	Percent finer
2.0	18.7	44.0	36.0	0.0139	44.0	9.1	0.0295	72.3
5.0	18.7	40.0	32.0	0.0139	40.0	9.7	0.0194	64.3
15.0	18.7	36.0	28.0	0.0139	36.0	10.4	0.0115	56.2
30.0	18.9	33.0	25.0	0.0138	33.0	10.9	0.0083	50.2
60.0	19.0	30.0	22.0	0.0138	30.0	11.4	0.0060	44.2
250.0	21.5	26.5	18.5	0.0134	26.5	11.9	0.0029	37.1
1440.0	17.9	24.5	16.5	0.0140	24.5	12.3	0.0013	33.1

Fractional Components

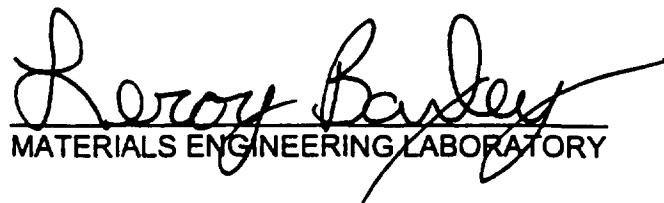
avel/Sand based on #4 sieve

nd/Fines based on #200 sieve

+ 3 in. = 0.0 % GRAVEL = 0.0 % SAND = 3.9

SILT = 54.5 % CLAY = 41.6

5= 0.05 D60= 0.015 D50= 0.008


Leroy Basler
MATERIALS ENGINEERING LABORATORY

Field Sampling Report, Sauget Area 1

3.20.4.4. Chain-of-Custody Forms

Figure 1. Example chain-of-command

Project Name: Support Sampling - Saugus Area 3 Site - Schenck Inc.
Job No. 23398

Office: St Louis, Mo 63128
Address: 5000 CEDAR PLAZA PKWY
Phone: (314) 842-4530

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: LOCATION:		OBRIEN & GERE SOUTIA SAUGET AREA I		COLLECTED BY: (Signature)	BULL WRIGHT JOE PERROT		MENZI-CURA	
SAMPLE DESCRIPTION/LOCATION		Date	Time	Sample Matrix ¹	Sample Type ¹	No. of Containers	ANALYSIS REQUESTED ¹	Sample Preservation
SITE G B3	0-0.5"			SURFACE SOIL	GRAB	1 BAG	MOISTURE CONTENT	
SITE G B4	0-0.5"			SURFACE SOIL	GRAB	1 BAG	BULK DENSITY	
SITE G B1	0-0.5"			SURFACE SOIL	GRAB	1 BAG	SPECIFIC GRAVITY	
SITE G B2	0-0.5"			SURFACE SOIL	GRAB	1 BAG		V
SITE M				SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTOR C	C-3			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTOR D	D-2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTOR B	B-2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTOR B	B-1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
B	B-3 DUP			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
D	D-3			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	V

Matrix = Ground water, surface water, sediment, biota

¹VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: <u>Dave Thompson</u> of: <u>O'BRIEN & GENE</u>	Date	Time	Courier Name and Airbill Number: <u>FED EX</u> <u>B12789433572</u>	Date	Time
*Attach delivery/courier receipt to Chain of Custody					
Relinquished by: _____ of: _____	Date	Time	Received by: <u>Deb Moul</u> of: <u>THOMPSON ENGINEERING</u>	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling .Sauget Area 1 Site. Solutia Inc.

Job No. 23598

Sheet 2 of 3

Office: St Louis, Mo 63128
 Address: 5000 CEDAR PLAZA PKWY
 Phone: (314) 842 - 4550

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: LOCATION:	OBRIEN & GERE SOLUTIA SAUGET AREA 1	COLLECTED BY: (Signature)	BILL WRIGHT JOE PERRY	MENEI CURA			
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
CREEK SECTION C C-1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	None
CREEK SECTION C C-2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
RA 2 - S1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
RA 1 - S2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
RA 1 - S1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
BPL- ESED - S FD			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
BPL- ESED - S3			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
BPL- ESED - S1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
BPL- ESED - S2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTION F S3			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTION F S1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	✓

¹ Matrix = Ground water, surface water, sediment, biota² VOC - USEPA 8260, 8270, 6010 ³Type = grab, composite

Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: <u>Clayton</u> <u>10/11/95</u> of: <u>OBRIEN & GERE</u>	Date	Time	Courier Name and Airbill Number: <u>FED- EX</u> <u>812789433572</u>	Date	Time
*Attach delivery/courier receipt to Chain of Custody					
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site, Solutia Inc.

Job No. 23540

Sheet 3 of 3

Office: St Louis, MO 63128
 Address: 5000 CEDAR PLAZA PKWY
 Phone: (314) 842-4550

CHAIN OF CUSTODY

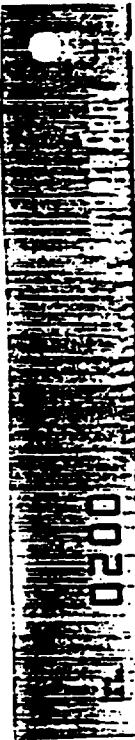
Cooler Temperature _____

CLIENT: O'BRIEN & GERE	COLLECTED BY: BILL WRIGHT MENZI - CURA						
LOCATION: SOUTIA SAUGET AREA 1	(Signature) JOE PERRY						
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
CREEK SECTION E S1			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	NONE
CREEK SECTION E S2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTION E S3			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
RA2 - S2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
CREEK SECTION F S2			SEDIMENT	GRAB	1 BOTTLE	GRAIN SIZE	
Site "L" 12-16feet			SOIL	GRAB	1 BAG	GRAIN SIZE	
Site "L" 39-43feet			SOIL	GRAB	1 BAG	GRAIN SIZE	
Site "H" 15-20feet			SOIL	GRAB	1 BAG	GRAIN SIZE	
Site "H" 39-43feet			SOIL	GRAB	1 BAG	GRAIN SIZE	↓

¹ Matrix = Ground water, surface water, sediment, biota² VOC - USEPA 8260, 8270, 6010 ³Type = grab, composite

Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: <u>Dawn Thompson</u> of: <u>O'BRIEN & GERE</u>	Date	Time	Courier Name and Airbill Number: <u>FED-EX</u> <u>B12789433572</u>	Date	Time
			*Attach delivery/courier receipt to Chain of Custody		
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

FedEx USA Airlift 812789433572



1 Sender's Name Date	2 Your Internal Billing Reference Phone #	3 Recipient's Name Company Address City	4 Special Handling Sunday Delivery Damage and Theft Delivery Instructions and Equipment Damage gratu	5 Payment Method Sender's Account Recipient Third Party Credit Card Cash/Check Total Weight Total Declared Value	6 Ratona Signature: _____ I am authorizing you to declare a higher value. See back for details
Alon Cor-V 10/11/99	167-9587-3	Dale Nolles 2254P.020.005 Thompson Engineers 3707 Cottage Hill Road Mobile AL 36609	Sunday Delivery Damage and Theft Delivery Instructions and Equipment Damage gratu	Total Weight Total Declared Value	[Signature]
Account Number	Phone (314) 612-4550	Phone (334) 666-2449			
Company Address City	2 Your Internal Billing Reference Phone #	3 Recipient's Name Company Address City	4 Special Handling Sunday Delivery Damage and Theft Delivery Instructions and Equipment Damage gratu	5 Payment Method Sender's Account Recipient Third Party Credit Card Cash/Check Total Weight Total Declared Value	6 Ratona Signature: _____ I am authorizing you to declare a higher value. See back for details
DBW Engineering 6000 Cedar Park Blvd St. Louis MO ZIP 63128	2 Your Internal Billing Reference Phone #	Dale Nolles Thompson Engineers 3707 Cottage Hill Road Mobile AL 36609	Sunday Delivery Damage and Theft Delivery Instructions and Equipment Damage gratu	Total Weight Total Declared Value	[Signature]

Express Pak-King® Service FedEx Standard Overnight
 FedEx Priority Overnight FedEx Next Day Air
 FedEx Express Saver* FedEx 2 Day*
 FedEx 1 Day* FedEx 20 Day* FedEx 10 Day*
 FedEx 8 Day* FedEx 2 Day Freight FedEx 20 Day Freight
 FedEx 10 Day Freight FedEx 3 Day Freight
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 FedEx International* FedEx International Pak* FedEx International Pkg

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[Signature]

Initials _____ Date _____
 Ratona Signature _____
 I am authorizing you to declare a higher value. See back for details

[Signature]

Initials _____ Date _____
 Ratona Signature _____
 I am authorizing you to declare a higher value. See back for details

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Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site, Solutia Inc.

Job No. 23548

Sheet 1 of 1

Office: O'Brien & Gere, Eng.

Address: 12250 Weber Hill Rd. ST. LOUIS, MO. 63127

Ine (314) 842 4550

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: Solutia, Inc. LOCATION: Sauget IL AREA 1		COLLECTED BY: (Signature) Nicholas E. Jenkins					
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASEF-CSF-S40-0-20"			Sediment	composite	1	Grain size	None
FASED-CSE-S2W-0-19"							
FASED-CSF-S10-0-12"							
FASED-CSF-S14-0-23"							
FASED-CSF-S34S-0-14"							
FASED-CSE-S6W-0-35"							
FASED-CSF-S17-							
FASED-CSF-S31N-0-13"							
FASED-CSF-S18F-0-9"							
FASED-CSF-S26W-0-13"			↓	↓	↓	↓	↓

atrix = Ground water, surface water, sediment, biota

¹ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: <u>Nicholas E. Jenkins</u> of: <u>O'Brien & Gere</u>	Date	Time	Received by: <u>12610X1608 10275672</u> of: <u>UPS</u>	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____ *Attach delivery/courier receipt to Chain of Custody	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site, Solutia Inc.
Job No. 23548

Sheet 1 of 1

Office: O'Brien & Gere, Eng.

Address: 12250 NUMBER HILL RD. ST. LOUIS, MO. 63127

Phone: 842-4550

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: Solutia Inc LOCATION: Sauget IL AREA 1			COLLECTED BY: (Signature) Thomas E. Jenkins				
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ¹	Sample Preservation
FASED-CSF-5355-0-21"	1		Sediment	composite	1	BRAIN SIZE	NONE
FASED-CSB-S6-0-20"							
FASED-CSB-S9W-0-9"							
FASED-CSB-S8E-0-22"							
FASED-CSC-S11-0-25"							
FASED-CSD-S1-0-24"							
FASED-CSC-S6-0-26"							
FASED-CSC-S12E-0-18"							
FASED-CSB-S1-0-25"							
FASED-CSC-S10-0-28"			V		V	V	V

Matrix = Ground water, surface water, sediment, biota

¹ VOC - USEPA 8260, 8270, 6010²Type = grab, composite

Relinquished by: Thomas E. Jenkins of: O'Brien & Gere	Date	Time	Received by: 12610X160810275681 of: UPS	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____ *Attach delivery/courier receipt to Chain of Custody	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area I Site. Solutia Inc.

Job No. 23548

Sheet 1 of 1

Office: O'Brien & Gere Cng.

Address: 12250 WERBEX HILL RD. ST. LOUIS, MO 63127 CHAIN OF CUSTODY

Phone: (314) 842-4550

Cooler Temperature _____

CLIENT: SOLUTIA, INC. LOCATION: SAUGET, IL, AREA 1		COLLECTED BY: <i>Colin Wellenkamp</i>					
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED-CSF-SITE-0-11"			REINFORCED COMPOSITE	1	1	GRAN SIZE	NONE
FASED-CSF-S5W-0-10"							
FASED-CSE-S24W-0-27"							
FASED-CSF-S33-0-13"							
FASED-CSF-S25E-0-10"							
FASED-CSF-S36N-0-13"							
FASED-CSF-S2-0-7"							
FASED-CSF-S1E-0-8"							
FASED-CSE-S20-0-33"							
FASED-CSE-S19E-0-28"							
FASED-CSE-S7E-0-11"							

Matrix = Ground water, surface water, sediment, biota

VOC - USEPA 8260, 8270, 6010

Type = grab, composite

Relinquished by: <i>COLIN WELLENKAMP</i> of: O'Brien & Gere	Date	Time	Received by: <i>12610X160816275707</i> of: UPS	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____	Date	Time
*Attach delivery/courier receipt to Chain of Custody					
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling, Saugat Area 1 Site, Solutia Inc.

Job No. 23548

Sheet 1 of 1

Office: O'Brien & Gere, Eng.

Address: 12250 Weber H.II Rd, ST. LOUIS, MO. 63127

Phone: (314) 842 4550

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: Solutia Inc. LOCATION: Saugat IL AREA 1			COLLECTED BY: (Signature) Thomas E. Jenkins				
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED-CSE-S9-0-31"			Sediment	composite	1	Grainsize	None
FASED-CSF-S38S-0-14"							
FASED-CSF-S28-0-10"							
FASED-CSE-S11W-0-22"							
FASED-CSD-S3-0-21"							
FASED-CSE-S210E-0-12"							
FASED-CSD-S2-0-15"							
FASED-CSE-S10W-0-27"							
FASED-CSE-S3E-0-13"							
FASED-CSE-S8-0-32"							

Matrix = Ground water, surface water, sediment, biota

¹ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: <i>Thomas E. Jenkins</i> of: O'Brien & Gere	Date 3-17-98	Time 1715	Received by: <i>12610X160810275734</i> of: UPS	Date <i>4/3/00</i>	Time 1715
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____ _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

***Attach delivery/courier receipt to Chain of Custody**



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Olympic Partner

36 USC 380

RECEIVED FROM (PLEASE PRINT)

NAME <i>Nick Leek MS</i>	DATE <i>02/12/95</i>
STREET <i>12750 Cotton Hill Road</i>	
CITY <i>PAR ST. LOUIS</i>	STATE <i>AL</i>
TELEPHONE (H) <i>(612) 343 0155</i>	TELEPHONE (W) <i>(314) 542 4220</i>

**CUSTOMER COUNTER
SHIPPING RECORD**

Questions?

www.ups.com

or

1-800-PICK-UPS

SHIPPER COMPLETE ALL INFORMATION BELOW / A DUPLICATE ADDRESS SHEET SHOULD BE INCLUDED IF OVER 100 LBS.					FOR UPS USE ONLY	
PACKAGE	SEND TO ADDRESS / LIST EACH PACKAGE SEPARATELY	COD AMOUNT	DECLARED VALUE	UPS ZONE	TYPE CHARGE	SHIPPER NO. - PACKAGE ID # - CHARGES
1	NAME <i>Thompson Engineering</i> STREET <i>12750 Cotton Hill Road</i> CITY <i>Mobile</i> STATE <i>AL</i> ZIP <i>36601</i>	\$			C.O.D.	
	PACKAGE CONTENTS: <i>5ml</i>				EXCESS VALUATION	
2	NAME <i>Federal</i> STREET	\$			C.O.D.	
	CITY <i>Mobile</i> STATE <i>AL</i> ZIP				EXCESS VALUATION	
	PACKAGE CONTENTS:				PACKAGE	
3	NAME <i>Federal</i> STREET	\$			C.O.D.	
	CITY <i>Mobile</i> STATE <i>AL</i> ZIP				EXCESS VALUATION	
	PACKAGE CONTENTS:				PACKAGE	
4	NAME <i>Federal</i> STREET	\$			C.O.D.	
	CITY <i>Mobile</i> STATE <i>AL</i> ZIP				EXCESS VALUATION	
	PACKAGE CONTENTS:				PACKAGE	

* Unless a greater value is declared in writing on this receipt, the shipper hereby declares and agrees that the released value of each package covered by this receipt is \$100, which is a reasonable value under the circumstances surrounding the transportation, even in the event that the carrier repackages or assists the shipper in packaging a shipment. In addition, the maximum value or declared value per package is \$50,000 and the maximum liability per package is \$50,000. Claims not made to the carrier within 9 months of the scheduled delivery date are waived. The carrier shall not be liable for any special, incidental, or consequential damages.

The entry of a C.O.D. amount is not a declaration of value. All checks tendered in payment of C.O.D.'s will be accepted by UPS.

All shipments are subject to the terms and conditions contained in the UPS tariff which is maintained at local UPS offices.

It's risk
www.ups.com

**Thank You For Using
United Parcel Service**

1. START WITH A GOOD QUALITY PACKAGING BOX

- a. **Use a corrugated box** - for best results, use a new box. If you must reuse a box, pack it like new, and seal all sides of the carton even if the box has already been used, recycled or sent in another shipment previously. The box **MUST exceed** the maximum gross weight for the class of service you expect, printed on the bottom flap.



- b. **Pad fragile objects** - wrap them in paper separately. Fragile items must be protected from damage and separated from the contents of the box by padding material. Use enough cushioning material to ensure that the contents would never easily move when you shake the box. Handle fragile objects require special packaging for safe shipment.



- c. **CLOSE IT SECURELY** - Use quality package sealing tape to close your package. Do not use masking tape, cellulose tape, string, or paper fasteners.



- d. **USE PROPER LABELING** - Use our address label that **INCLUDES** your complete return address including ZIP Code, and include the receiver's complete street address including ZIP Code. Place the label over a seam, closure or on top of sealing tape.



1	DELIVERYTRAC TRACKING NUMBER  1Z 610X16 08 1027 5872
2	DELIVERYTRAC TRACKING NUMBER  1Z 610X16 08 1027 5881
3	DELIVERYTRAC TRACKING NUMBER  1Z 610X16 08 1027 5707
4	DELIVERYTRAC TRACKING NUMBER  1Z 610X16 08 1027 5734

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site . Solutia Inc.
Job No. 23548

Sheet 1 of 1

Office: O'BRIEN & GERE ENG.

Address: 12850 Weber Hill Rd. St. Louis, MO 63127 CHAIN OF CUSTODY

Phone: (314) 842-4550

Cooler Temperature _____

CLIENT: LOCATION:			COLLECTED BY: (Signature)				
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED-CSE-S17-0-28"			Sediment	COMPOSITE	1	GRAIN SIZE	NONE
BSEE04-0-5'-sub			SOIL			* see below	
FASED-CSE-S15-0-19"			Sediment			GRAIN SIZE	
FASED-CSE-S5E-0-24"							
FASED-CSE-S13E-0-21"							
FASED-CSE-S14W-0-31"							
FASED-CSE-S4E-0-17"							
FASED-CSE-S12-0-21"							
FASED-CSE-S4-0-23"							
FASED-CSE-S39-0-26"							
FASE0-CSF-S4-0-7" 10-74							

FASED-CSE-S2-0-15" Matrix = Ground water, surface water, sediment, biota VOC - USEPA 8260, 8270, 6010 Type = grab, composite

Relinquished by: COLIN WELLINKAM / of: O'BRIEN & GERE	Date	Time	Received by: 12610X160810275716 of: UPS	Date	Time
	8/13/00	1723		8/13/00	1723
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____	Date	Time
			*Attach delivery/courier receipt to Chain of Custody		
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

* Bulk density, moisture content, specific gravity

Figure 1. Example chain-of-custody

Project Name: Support Sampling, Saugat Area 1 Site, Solutia Inc.

Job No. 23548

Sheet 1 of 1

Office: O'Brien + Gere

Address: 12250 Webster Hill Rd., St. Louis, MO 63127 CHAIN OF CUSTODY

Phone: 314-842-4550

Cooler Temperature _____

CLIENT: Solutia, Inc. LOCATION: Saugat Area 1			COLLECTED BY: <i>David E. Haerdink</i> (Signature)				
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ¹	Sample Preservation
FASED-CSE-S21-0-28"			Sediment	Comp.	1	Grain Size	None
FASED-CSE-S22E-0-26"							
FASED-CSE-S23-0-23"							
FASED-CSE-S25W-0-29"							
SITE N B1			Soil				
SITE N B2							
SITE N B3							
SITE N B4							
EE20-0-5'							
EE20-0-6'							

¹ Matrix = Ground water, surface water, sediment, biota¹ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: <i>David E. Haerdink</i> of: O'Brien + Gere	Date <i>17FEB00</i>	Time <i>1725</i>	Received by: <i>12610X160510275725</i> of: UPS	Date <i>17FEB00</i>	Time <i>1725</i>
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____ *Attach delivery/courier receipt to Chain of Custody	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site, Solutia Inc.

Job No. 25548

Sheet 1 of 1

Office: O'Brien & Gere

Address: 12250 Weber Hill Rd., St. Louis, MO 63127 CHAIN OF CUSTODY

Phone: 314-842-4550

Cooler Temperature _____

CLIENT: LOCATION:	COLLECTED BY: (Signature)			ANALYSIS REQUESTED'			Sample Preservation,
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers		
FASED-BPL-S1-0-10"			Sediment	COMPOSITE		Grain size	None
FASED-BPL-S2-0-10"			Sediment				
BS-EEG-108 0-5ft			Soil			* see below	
FASED-BPL-S3-0-9"						Grain size	
FASED-BPL-S4-0-10"							
FASED-BPL-S5-0-10"							
FASED-BPL-S6-0-11"							
FASED-BPL-S7-0-18"							
FASED-BPL-S7-0-9"							
FASED-CSB-S10W-0-9"			✓	✓	✓	✓	✓

Matrix = Ground water, surface water, sediment, biota

³ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: <u>Cain Wellenkamp</u> of: <u>O'BRIEN & GERE</u>	Date	Time	Received by: <u>121-10 X16 08 10275743</u> of: <u>UPS</u>	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____	Date	Time
*Attach delivery/courier receipt to Chain of Custody					
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

* Bulk density, moisture content, specific gravity



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RECEIVED FROM (PLEASE PRINT)			DATE
NAME	Nick Jenkins (C. Michael Gere)		02/17/00
STREET	12750 Weber Hill Road		
CITY	ST. LOUIS	STATE	ZIP CODE
TELEPHONE (H)	(618) 343-0158	TELEPHONE (W)	(314) 542-4550
36 USC 380			

SHIPPER COMPLETE ALL INFORMATION SHOWN BELOW / A DUPLICATE ADDRESS LABEL SHOULD BE ENCLOSED IN EACH PACKAGE

PACKAGE	SEND TO ADDRESS / LIST EACH PACKAGE SEPARATELY	C.O.D. AMOUNT	DECLARED VALUE*	UPS ZONE	TYPE CHARGE	FOR UPS USE ONLY	
						SHIPPER NO. - PACKAGE ID # - CHARGES	
1	NAME Thompson Engineering STREET 3707 Cottage Hill Road CITY STATE ZIP Mobile AL 36691 PACKAGE CONTENTS: SUV	\$			C.O.D.		
2	NAME Save STREET CITY STATE ZIP	\$			EXCESS VALUATION		
3	NAME Save STREET CITY STATE ZIP	\$			PACKAGE		
4	NAME Save STREET CITY STATE ZIP	\$			C.O.D.		
	PACKAGE CONTENTS:				EXCESS VALUATION		
	PACKAGE CONTENTS:				PACKAGE		
	PACKAGE CONTENTS:				C.O.D.		
	PACKAGE CONTENTS:				EXCESS VALUATION		
	PACKAGE CONTENTS:				PACKAGE		

* Unless a greater value is declared in writing on this receipt, the shipper hereby declares and agrees that the released value of each package covered by this receipt is \$100, which is a reasonable value under the circumstances surrounding the transportation, even in the event that the carrier repackages or assists the shipper in packaging a shipment. In addition, the maximum value or declared value per package is \$50,000 and the maximum liability per package is \$50,000. Claims not made to the carrier within 9 months of the scheduled delivery date are waived. The carrier shall not be liable for any special, incidental, or consequential damages.

The entry of a C.O.D. amount is not a declaration of value. All checks tendered in payment of C.O.D.'s will be accepted by UPS at shipper's risk.

All shipments are subject to the terms and conditions contained in the UPS tariff which is maintained at local UPS offices or at www.ups.com.

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Questions?

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or

1-800-PICK-UPS

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United Parcel Service

DELIVERYTRAC TRACKING NUMBER
12 610X16 OR 1027 571 6

DELIVERYTRAC TRACKING NUMBER
12 610X16 OR 1027 572 5

DELIVERYTRAC TRACKING NUMBER
12 610X16 OR 1027 574 3

DELIVERYTRAC TRACKING NUMBER
12 610X16 OR 1027 575 2

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Saugat Area 1 Site. Solutia Inc.

Job No. 22548

Sheet 1 of 1

Office: O'Brien & Gere, Eng.

Address: 17250 Weber Hill Rd. ST. LOUIS, MO. 63127

Phone: (314) 842 4550

CHAIN OF CUSTODY

Cooler Temperature _____

SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³		Sample Preservation
						Grain Size	None	
FASED-CSF-S11W-0-10 "			Sediment	Composite	1			
FASED-CSF-S13W-0-15 "								
FASED-CSF-S19-0-13 "								
FASED-CSF-S22-0-20 "								
FASED-CSF-S20-C-12 "								
FASED-CSF-S12-0-15 "								
FASED-CSF-S37-0-13 "								
FASED-CSF-S3E-0-6 "								
FASED-CSF-S29W-0-10 "								
FASED-CSF-S27E-0-16								
FASED-CSF-S30N-0-8 "								

¹ Matrix = Ground water, surface water, sediment, biota¹ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: <u>Nicholas S. Tubkins</u> of: O'Brien and Gere	Date: <u>12-10-00</u>	Time: <u>1720</u>	Received by: <u>12610X16.0814775761</u> of: <u>UPS</u>	Date: <u>12/10/00</u>	Time: <u>1720</u>
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date: _____	Time: _____	Courier Name and Airbill Number: _____ *Attach delivery/courier receipt to Chain of Custody	Date: _____	Time: _____
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Saugat Area 1 Site, Solutia Inc.

Job No. 23548

Sheet 1 of 1

Office: O'BRIEN & GERE ENG.

Address: 13650 WILDER HILL RD. ST. LOUIS, MO 63127 CHAIN OF CUSTODY

Phone: (314) 842-4550

Cooler Temperature _____

CLIENT: SOLUTIA, INC.	COLLECTED BY: (Signature)	Colin Wellenkamp					
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED-CSF-S1E-0-13"			SEBIMENT	COMPOSITE	1	GRAIN SIZE	NONE
FASED-CSF-S10-0-10"							
FASED-CSE-S16E-0-21"							
FASED-CSF-S9-0-11"							
FASED-S24H-							
FASED-CSF-S1SW-0-28"							
FASED-CSF-S8-0-15"							
FASED-CSF-S18-0-25"							
FASED-CSF-S21-0-14"							
FASED-CSF-S6E-0-10"							
FASED-CSF-S14W-0-15"			↓	↓	↓	↓	↓

¹ Matrix = Ground water, surface water, sediment, biota³ VOC - USEPA 8260, 8270, 6010² Type = grab, composite

Relinquished by: <u>COLIN WELLENKAMP</u> of: O'BRIEN & GERE	Date: <u>2-17-00</u>	Time: <u>1720</u>	Received by: <u>12610X160810275770</u> of: UPS	Date: <u>2/17/00</u>	Time: <u>1720</u>
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date: _____	Time: _____	Courier Name and Airbill Number: _____ *Attach delivery/courier receipt to Chain of Custody	Date: _____	Time: _____
Relinquished by: _____ of: _____	Date: _____	Time: _____	Received by: _____ of: _____	Date: _____	Time: _____

Figure 1. Example chain-of-custody

Project Name: Support Sampling . Sauget Area 1 Site. Solutia Inc.
Job No. 23548

Sheet 1 of 1

Office: O'BRIEN & GERE ENG.

Address: 12250 WEEKEHILL RD. ST. LOUIS, MO 63127 CHAIN OF CUSTODY

Phone: 842-4550

Cooler Temperature _____

CLIENT: SOUTIA, INC.	COLLECTED BY: (Signature)						
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED-CSB-S3-0-36"			Sediment	Composite	1	Grain size	NONE
FASED-CSD-S7-0-33"							
FASED-CSD-S9-0-23"							
FASED-CSC-S1-0-13.5"							
FASED-CSC-S8-0-16"							
FASED-CSC-S9-0-27"							
FASED-CSC-S2-0-28.5"							
FASED-CSF-S24W-0-13"							
BSSED-PDC-VS-N-0-345"							
BSSED-PDC-DS-0-54"							
FASED-CSF-S7E-0-11"							
FASED-CSF-S32S-0-11"							

Matrix = Ground water, surface water, sediment, biota

¹ VOC - USEPA 8260, 8270, 6010² Type = grab composite

Relinquished by: Colin Wellenkamp of: O'Brien & Gere	Date	Time	Received by: 2610X160810275789 of: UPS	Date	Time
	2/17/00	1721		2/17/00	1721
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____	Date	Time
			*Attach delivery/courier receipt to Chain of Custody		
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time

Figure 1. Example chain-of-custody

Project Name: Support Sampling, Sauget Area 1 Sjte, Solutia Inc.
Job No. 23548

Sheet 1 of 1

Office: O'BRIEN & GERE ENG.

Address: 12250 WICKER HILL RD. ST. LOUIS, MO 63127

Phone: (314) 842-4550

CHAIN OF CUSTODY

Cooler Temperature _____

CLIENT: SOUTIJA, INC LOCATION: SAUGET, TL AREA 1	COLLECTED BY: Colin Wellenkamp						
SAMPLE DESCRIPTION/LOCATION	Date	Time	Sample Matrix ¹	Sample Type ²	No. of Containers	ANALYSIS REQUESTED ³	Sample Preservation
FASED - CSC-SSW-0-26"			sediment	composite	1	grain size	none
FASED - CSC-S7-0-29"							
FASED - BPL-S3-0-8"							
FASED - CSB-SS-0-22"							
FASED - CSB-S4W-0-23"							
FASED - CSC-S4-0-22"							
FASED - CSC-S3-0-22"							
FASED - CSD-SS-0-10"							
FASED - CSB-S2-0-23"							
FASED - CSD-S8-0-29"			V	V	V	V	V

¹ Matrix = Ground water, surface water, sediment, biota¹ VOC - USEPA 8260, 8270, 6010 ²Type = grab, composite

Relinquished by: Colin Wellenkamp of: O'Brien & Gere	Date	Time	Received by: 1Z610X160810275798 of: UPS	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time
Use this space if shipped via courier (e.g., Fed Ex) Relinquished by: _____ of: _____	Date	Time	Courier Name and Airbill Number: _____	Date	Time
*Attach delivery/courier receipt to Chain of Custody					
Relinquished by: _____ of: _____	Date	Time	Received by: _____ of: _____	Date	Time



RECEIVED FROM (PLEASE PRINT)					
NAME <i>Nick Jenkins</i>	DATE <i>12/17/00</i>				
STREET <i>12250 Welles Hill Road</i>		STATE <i>MO</i>	ZIP CODE <i>36691</i>		
CITY <i>ST. LOUIS</i>					
TELEPHONE (H) <i>(314) 343-0155</i>		TELEPHONE (W) <i>(314) 542-4550</i>			
36 USC 360					

SHIPPER COMPLETE ALL INFORMATION SHOWN BELOW / A DUPLICATE ADDRESS LABEL SHOULD BE ENCLOSED IN EACH PACKAGE

PACKAGE	SEND TO ADDRESS / LIST EACH PACKAGE SEPARATELY	C.O.D. AMOUNT	DECLARED VALUE*	UPS ZONE	FOR UPS USE ONLY	
					SHIPPER NO. - PACKAGE ID # - CHARGES	TYPE CHARGE
1	NAME <i>Thompson Engineers, Inc.</i> STREET <i>3707 Cottage Hill Road</i> CITY <i>Mobile</i> STATE <i>AL</i> ZIP <i>36691</i>	\$			C.O.D.	
	PACKAGE CONTENTS: <i>Soil</i>				EXCESS VALUATION	
2	NAME <i>Stevens</i> STREET <i></i> CITY <i></i> STATE <i></i> ZIP <i></i>	\$			C.O.D.	
	PACKAGE CONTENTS: <i></i>				EXCESS VALUATION	
3	NAME <i>Stevens</i> STREET <i></i> CITY <i></i> STATE <i></i> ZIP <i></i>	\$			C.O.D.	
	PACKAGE CONTENTS: <i></i>				EXCESS VALUATION	
4	NAME <i>Stevens</i> STREET <i></i> CITY <i></i> STATE <i></i> ZIP <i></i>	\$			C.O.D.	
	PACKAGE CONTENTS: <i></i>				EXCESS VALUATION	

* Unless a greater value is declared in writing on this receipt, the shipper hereby declares and agrees that the released value of each package covered by this receipt is \$100, which is a reasonable value under the circumstances surrounding the transportation, even in the event that the carrier repackages or assists the shipper in packaging a shipment. In addition, the maximum value or declared value per package is \$50,000 and the maximum liability per package is \$50,000. Claims not made to the carrier within 8 months of the scheduled delivery date are waived. The carrier shall not be liable for any special, incidental, or consequential damages.

The entry of a C.O.D. amount is not a declaration of value. All checks tendered in payment of C.O.D.'s will be accepted by UPS at shipper's risk.

All shipments are subject to the terms and conditions contained in the UPS tariff which is maintained at local UPS offices or at www.ups.com.

CUSTOMER COUNTER SHIPPING RECORD

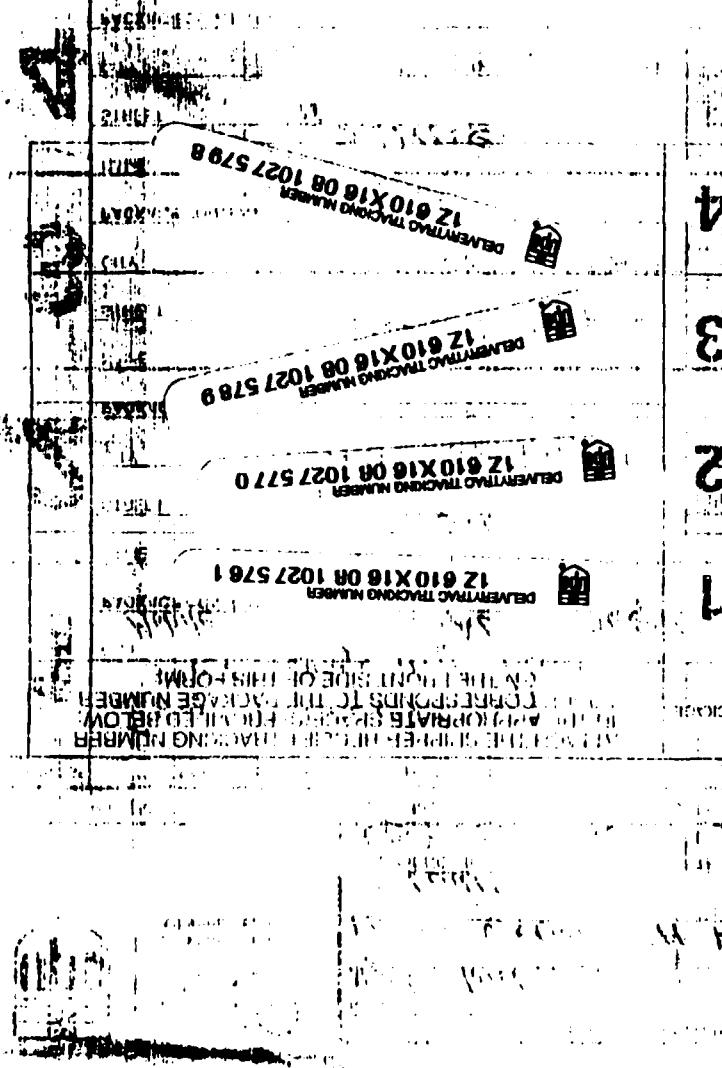
Questions?

www.ups.com

or

1-800-PICK-UPS

GUIDELINES FOR NYUU PACKAGING



1. USE A CORRUGATED BOX - For best results, use a new box large enough to allow room for shipping. Use double-sided tape or other shipping materials to seal the box. Never exceed the maximum gross weight for the box which is usually printed on the bottom flap.

2. USE A PROTECTIVE LINER - Place a protective liner inside the box. This may be a sheet of plastic, bubble wrap, or a padded envelope. This will help protect your item from damage during transit.

3. CLOSE IT SECURELY - Use a sturdy adhesive to close the box securely. Use caution when closing the box to avoid cutting yourself.



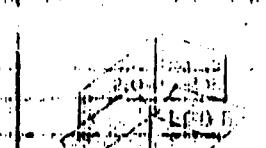
4. USE ZIPPERED ZIP CODES - Use self-laminating zip codes to seal the top of the box.



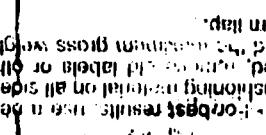
5. USE ADDRESS LABELS - Use address labels to identify the contents of the box. These labels should be placed on the front of the box and include the recipient's name, address, and zip code.



6. USE A PROTECTIVE LINER - Place a protective liner inside the box. This may be a sheet of plastic, bubble wrap, or a padded envelope. This will help protect your item from damage during transit.



7. USE A PROTECTIVE LINER - Place a protective liner inside the box. This may be a sheet of plastic, bubble wrap, or a padded envelope. This will help protect your item from damage during transit.



8. USE A PROTECTIVE LINER - Place a protective liner inside the box. This may be a sheet of plastic, bubble wrap, or a padded envelope. This will help protect your item from damage during transit.



JAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 12 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858
Fax: (912) 352-0165
- Phone: (904) 878-3994
Fax: (904) 878-9504
- Phone: (954) 421-7400
Fax: (954) 421-2584
- Phone: (334) 666-6633
Fax: (334) 666-6696
- Phone: (813) 885-7427
Fax: (813) 885-7049
- Phone: (504) 764-1100
Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER	DIRECT	MATRIX TYPE	REQUIRED ANALYSES				PAGE	OF
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	(714) 812-1550		LIQUID (air, solvent etc)	VOC (500/600)	PCP (500/600)	STP (500/600)	CHP (500/600)	TQO (500/600)	
	JW Perry	FAX	(311) 812-3766		SOLID OR SEMI-SOLID	ATM (air, solvent etc)	FTC (600)	SVOC (500/600)	TPB (500/600)	CHP (500/600)	
CLIENT NAME		CLIENT PROJECT MANAGER		Kathy Perry, Solut.	AQUEOUS (WATER)	ATM (air, solvent etc)	FTC (600)	SVOC (500/600)	TPB (500/600)	CHP (500/600)	
CLIENT ADDRESS (CITY, STATE, ZIP)				SL Louis, MO	SOLID	cool	cool	cool	cool	cool	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED				REMARKS		
DATE	TIME		SED-CSC-S1-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1700		SED-CSC-S2-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1620		SED-CSC-S3-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1530		SED-CSD-S1-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1115		SED-CSD-S2-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1250		SED-CSD-S3-0.2 FT	X	1	1	3	1	1	1	
10/1/99	1430		SES-CSD-S3-0.2 FT	X	1	1	3	1	1	1	
269A-21											
10/1/99		-	TEMP BLANK	X			3				
10/1/99		-	TEMP BLANK	X							
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)		DATE	TIME	
<i>[Signature]</i>		10/1/99	1700	<i>[Signature]</i>	10/1/99	0800	<i>[Signature]</i>		10/1/99	1700	
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	
<i>[Signature]</i>		9/26/99		<i>[Signature]</i>	10/1/99	0800	<i>[Signature]</i>		10/1/99	1900	
LABORATORY USE ONLY											
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS				
				<input type="checkbox"/> YES <input type="checkbox"/> NO							

SDA11

FedEx USA Airbill

FedEx
Tracking Number

8155 1526 5872

1 Please print and press hard
Date 10/1/99 **Sender's FedEx Account Number** 1187-9587-3

Sender's Name Alan Cork **Phone** (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Room/Suite/Room

City SAINT LOUIS **State** MO **ZIP** 63128

2 **Your Internal Billing Reference**
Any 10 characters will appear on invoice 23548.050.008

3 **To**
Recipient's Name Betzy Beachamp **Phone** (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE Dept./Room/Suite/Room

Is HOLD at FedEx location,
print FedEx address here

City SAVANNAH **State** GA **ZIP** 31404

NEW FED EX AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111962862

For FedEx 0215

4a **Priority Air Service**

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Excludes non-business morning delivery to select locations

FedEx 2Day* Second business day

FedEx Express Saver* Third business day

Packages up to 150 lbs.
Delivery commitment may be held in some areas

* FedEx Lesser Rate not available

Minimum charge One pound rate

4b **Freight Service**

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

Packages over 150 lbs.

Delivery commitment may be later in some areas

* Call for Confirmation

5 **Packing**

FedEx Letter* FedEx Pak* Other Pkg* Includes FedEx Box, FedEx tube, and custom pkg

6 **Special Handling**

Saturday Delivery Available for FedEx Priority Overnight and FedEx 1Day to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight

HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 1Day to select locations

Does this shipment contain dangerous goods?
 No Yes As per attached
Shipper's Declaration Yes Shipper's Declaration
not required Dry Ice Dry I.C. I.M.D. 146 Cargo Aircraft Only

7 **Recipient** Bill to

Sender Acc. No. in Section 1 and be held Recipient Third Party Credit Card Cash/Check

FedEx Acc. No.
Credit Card No.

Total Packages	Total Weight	Total Declared Value*
1	49	\$.00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 **Release Signature** Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

[359]

FDP 800 • Rev. Date 11/98 • Part # 1540135 • D 1004 90 FedEx • PRINTED IN U.S.A.

RETAIN THIS COPY FOR YOUR RECORDS

CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Co.Name: Solutia / O'Brien & GORE

Contact Name: Kimberly Peavy - Solutia

Address: St. Louis, MO

Project Name: Solutia Saugat Areal

PO#: Direct Bill to Solutia

Phone #: 314 / 842 / 4550

Total No. of
Containers

Analysis Wanted

1. TCLP Dioxin
METHOD 8280A
2. DIOXIN METHOD 8290

STA No.	Date	Time	Comp	Grab	Sample I.D.#	# of Cont.	1.	2.			Remarks
SITE H	10/4/99	1026	X		WASTE - H - B3 Camp	1	X				
SITE H	10/4/99	1515	X		WASTE - H - B4 Camp	1	X				
Dead Creek Seg B ^{STA} 3	10/4/99	1600		X	SW-CSB-S3	2		X			
Dead Creek Sed Seg C	10/4/99	1700	X		SED-CSC-S1	1		X			
Dead Creek Sed Seg C	10/4/99	1620	X		SED-CSC-S2	1		X			
Dead Creek Sed Seg C	10/4/99	1530	X		SED-CSC-S3	1		X			
Dead Creek Sed Seg D	10/4/99	1615	X		SED-CSD-S1	1		X			
Dead Creek Sed Seg D	10/4/99	1250	X		SED-CSD-S2	1		X			
Dead Creek Sed Seg D	10/4/99	1430	X		SED-CSD-S3	1		X			
											BL# #815747919553
Temp Blank	10/4/99										

Relinquished By/Sign. <i>Kimberly Peavy</i>	Date/Time 10/4/99 1715	Received By/Sign. FED-X #815747919553	Relinquished By/Sign.	Date/Time	Received By/Sign.
Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.

Received for Laboratory By/Signature

Date/Time

Send Samples To: Triangle Laboratories of RTP, Inc.

801 Capitol Drive
Durham, North Carolina 27713

COC/DLH

REVISION 5/23/94

FedEx USA Airbill FedEx tracking number 8157 4791 9553

1 FROM Please print and press card
 Date 10/4/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Tony Fennett Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept./Floor/Sub/Floor

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference:
 Five to characters will appear on invoice

23548, Waste Boys

3 To Recipient's Name Frank Stevens Phone ()

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR

Dept./Floor/Sub/Floor

We cannot deliver to P.O. Boxes or P.O. ZIP codes.

To HOLD at FedEx location,
 give FedEx add res here.
 City DURHAM State NC ZIP 27713

NEW Peel and Stick FedEx USA Airbill
 See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability.

0111963289

From
 Zip No. 0215

50

4a Express Package Service

FedEx Priority Overnight Next business morning Packages up to 150 lbs.
Delivery commitment may be later in some areas

FedEx Standard Overnight Next business afternoon FedEx First Overnight
Deliver next business morning delivery to select locations

FedEx 2Day* Second business day FedEx Express Saver* Third business day * FedEx Letter Rate not available
Minimum charge One pound rate

FedEx 3Day Freight Third business day Packages over 150 lbs.
Delivery commitment may be later in some areas

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight
Third business day

* Call for Confirmation Declared value limit \$250

5 Packaging

FedEx Letter* FedEx Pak* Other Pkg Includes FedEx Box, FedEx Box, and customer pkg

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes HOLD Weekday at FedEx location Not payable with FedEx First Overnight HOLD Saturday at FedEx location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?
 No Yes As per attached Shipper's Declaration not required Dry Ice Dry Ice is UN 1945

Dangerous Goods cannot be shipped in FedEx packaging Cargo Aircraft Only

7 Payment

Sender Enter Acct. No. or Credit Card No. below Recipient Third Party Credit Card Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages Total Weight Total Declared Value
 50 \$ 00 FedEx Use Only

Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without receiving signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

[359]

RETAIN THIS COPY FOR YOUR RECORDS

269A-24



SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 1002 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER	MATRIX TYPE		REQUIRED ANALYSES						PAGE	OF									
SOLUTIA SAVANNAH AREA 1		23040	TO SOLUTIA																			
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	314 842 4110																			
IL	JOSEPH W. PERRY	FAX	314 842-3266																			
CLIENT NAME		CLIENT PROJECT MANAGER	Kathy L. MIN SOLUTIA																			
CLIENT ADDRESS (CITY, STATE, ZIP)		Savanna, GA 31404																				
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		AQUEOUS(WATER) AIR	SOLID OR SEMI-SOLID	NONAQUEOUS LIQUID (oil, solvent, etc.)	VOC	CO ₂	CH ₄	SO ₂	NO ₂	NaOH	Cool	CO ₂	CH ₄	SO ₂	NO ₂	NaOH	Cool	Date Due	STANDARD REPORT DELIVERY
DATE	TIME																				EXPEDITED REPORT DELIVERY (surcharge)	
10-5-99	0300		SED-CSB-EB		X				3	2	1	1	4	1								
10-5-99	--		TRIP BLANK		X				3													
10-5-99	--		TEMP. BLANK		X																	
269A-25																						
RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY (SIGNATURE)			DATE	TIME	RELINQUISHED BY (SIGNATURE)			DATE	TIME								
RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY (SIGNATURE)			DATE	TIME	RECEIVED BY (SIGNATURE)			DATE	TIME								
FED EX # 8155 15265953			10-5-99	2100																		

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:
			<input type="checkbox"/> YES <input type="checkbox"/> NO			

CLIENT CHAIN OF CUSTODY		SAMPLER'S SIGNATURE <i>Joseph W. Dwyer</i>		Project/Quote 04939/9900001069		
From (1): Solutia, Inc. 575 Maryville Center Drive St. Louis, MO 63141 Project (1): Sauget Area 1 Support Sampling		Contact: Mr. Alan Cork Phone: 314-674-3402 Fax: 314-674-8957 P.O. # (1): Bill Directly TO Solutia		Analysis Wanted (2): 052905 NIXOQD		Total Number of Containers: 15
(SOL05 /FMS)		Data to be reported to the state of MO.				Turn Around Time (In Calendar Days):
Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.		Remarks
SW-CSB-S1	10/5/99 1215	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water	2 Amber l	X	
SW-CSB-S2	10/5/99 1115	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-M-S1	10/5/99 1000	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-BPL-S2	10/5/99 1600	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-BPL-S1	10/5/99 1720	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SED-CSB-S1	10/5/99 1145	Cool	Sediment	1. Amber l	X	
SED-CSB-S2	10/5/99 1530	Cool	Sediment		X	
SED-CSB-S3	10/5/99 1030	Cool	Sediment		X	
SED-CSB-S1 FD	10/5/99 1145	Cool	Sediment		X	
SED- CSB -M-S1	10/5/99 1500	Cool	Sediment		X	
Relinquished By/Sign. <i>Joseph W. Dwyer</i>	Date/Time 10.5.99 2100	Received By/Sign. FedX #815717919575	Relinquished By/Sign.	Date/Time	Received By/Sign.	
Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitol Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491				

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
- (4) Please indicate the preservation used for each sample.

Brian S Thompson

LOFL

CLIENT CHAIN OF CUSTODY		SAMPLER'S SIGNATURE John E. Hug Project/Quote 04939/9900001069			
From (1): Solutia, Inc. 575 Maryville Center Drive St. Louis, MO 63141 Project (1): Sauget Area 1 Support Sampling		Contact: Mr. Alan Cork Phone: 314-674-3402 Fax: 314-674-8957 P.O.# (1): Bill Directly to Solutia		Analysis Wanted (2): Observations	Total Number of Containers: 3
(SOL05 /FMS)		Data to be reported to the state of MO.			
Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	Remarks
SED-CSB-EB	10/5/99 0800	Cool, Na ₂ S ₂ O ₃	Water	2-Amber l	X
TEMP BLANK	10/5/99	Cool	Water		
Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
Joseph W. Peng	10/5/99	FedEx #815717919575			
Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitol Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491			

Directions:

- (1) Provide and/or correct client and project information.
 (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
 (4) Please indicate the preservation used for each sample.



FedEx
Tracking
Number

8157 4791 9575

8DA21

0215

1 From Please print and press hard

Date 10/5/99

Sender's FedEx
Account Number

1187-9587-3

Sender's
Name

Alcon Co-K

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS

State MO ZIP 63128

Dept./Place/Office/Room

2 Your Internal Billing Reference

Post 24 characters will appear on invoice.

23518.060.001

3 To

Recipient's
Name

B Frank Stevens

Phone ()

Dept./Place/Office/Room

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR

We cannot deliver to PO boxes or P.O. ZIP codes

Dept./Place/Office/Room

To "HOLD" at FedEx location,
print FedEx address here

City DURHAM

State NC ZIP 27713

Dept./Place/Office/Room

NEW FedEx Airbill/FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111963289

4a Express Package Service

Packages up to 150 lbs.

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earliest next business morning
Delivery to select locations

Delivery commitment may be later in some areas.

FedEx 2Day®
Second business day

FedEx Express Saver®
Third business day

* FedEx Letter Rate not available
Minimum charge, One-pound rate

4b Express Freight Service

Packages over 150 lbs.

FedEx 1Day Freight®
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

Delivery commitment may be later in some areas.

5 Packaging

FedEx Letter®

FedEx Pak®

* Declared value limit \$500
 Other Pkg.
Individually Box FedEx
Label, and customer pkg.

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Does this shipment contain dangerous goods?

No Yes
As per attached
Shipper's Declaration

Yes
Shipper's Declaration
not required

Dangerous Goods cannot be shipped in FedEx packaging

Dry Ice

Dry Ice, & UV 100

to

Cargo Aircraft Only

7 Payment Bill to:

Enter first & last name, credit card and the below information

Sender
Acct No in Section 1
will be billed

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Exp Date

Total Packages Total Weight Total Declared Value

\$.00

FedEx Use Only

* Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature

Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

SMP 999 • Rev. Date 11/98 • Part #1548135 • © 1994 FedEx • PMKTID IN U.S.A.

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RETAIN THIS COPY FOR YOUR RECORDS



JAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 12 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

CLIENTS FIELD COPY

269A-33

FedEx USA Airbill 8155 1526 5883

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Date 10/6/99 **Sender's FedEx
Account Number** 1107-9587-3

Sender's
Name _____
Alan Cork Joseph Phone 314-1842-4550
N. Perry

Address: 5000 CEDAR PLAZA PKWY STE 211

PLAZA PKWY STE 211

SAINT LOUIS St. Louis, Mo. Zip 63128
Your Internal Billing Reference
Reprint Address: **23548.050.006**

Company SAVANNAH LABORATORIES

Address 5102 1/2A ROCHE AVE
Via Central Station
Date Nov 20 1940

to 1950's oil wells for more
present fields indicate some

SAVANNAH GA 31404
NEW YORK CITY USA

Questions? Call 1-800-Go-FedEx® (800-463-3339)

By using this App you agree to the service's Conditions on the back of this App and in our current Service Guide, including terms that limit our liability.

298296110

By signing you authorize us to deliver this shipment without obtaining a
receipt or signature and hold us harmless from any resulting claim.
Date 080 - Rev. Date 11/80 - Part 0140125-2 1984 04 15 - PRENTITI M U S A

359

RETAIN THIS COPY FOR YOUR RECORDS

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claim.

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

(SOL05 /FMS)

Contact: Mr. Alan Cork
Phone: 314-674-3402
Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

Total Number of
Containers:

14

Turn Around Time
(In Calendar Days):

Data to be reported to the state of MO.

Dowm (SOL05)

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.				Remarks
SU-CSD-S3	10/6/99 1610	cool, Na ₂ S ₂ O ₃	water	2 liter	X			
SU-CSD-S2	10/6/99 1440	cool, Na ₂ S ₂ O ₃	water	2 liter	X			
SU-CSD-E.B	10/6/99 1540	cool, Na ₂ S ₂ O ₃	water	2 liter	X			
SED-CSE-S2-0.2FT	10/6/99 0930	cool	sediment	1 liter	X			
SED-CSE-ST-0.2FT	10/6/99 1045	cool	sediment	1 liter	X			
SED-CSE-S3-0.2FT	10/6/99 1430	cool	sediment	1 liter	X			
BPL-ESED-S1-0.2FT	10/6/99 1100	cool	sediment	1 liter	X			
BPL-ESED-S1-FD-0.2FT	10/6/99 1100	cool	sediment	1 liter	X			
BPL-ESED-S3-0.2FT	10/6/99 1630	cool	sediment	1 liter	X			
SED-CSE-S3-0.2FT M3	10/6/99 1430	cool	sediment	2 liter	X			

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
		FedEx # 815747919597			

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitola Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

(3) Enter the sample ID to be used when reporting the samples.

(4) Please indicate the preservation used for each sample.

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-9504
- 414 SW 12th Avenue, Deerfield Beach, FL 33442 Phone: (954) 421-7400 Fax: (954) 421-2584
- 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	REQUIRED ANALYSES												PAGE / OF /				
SOLUTIA - SAVANNAH		23548	DIREC1																	
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	(314) 542-4150	MATRIX TYPE																
IL	JW PERRY CA MILNIE	FAX	(314) 542-2261																	
CLIENT NAME		CLIENT PROJECT MANAGER																		
SOLUTIA		KIMBERLY PERRY - SOLUTIA																		
CLIENT ADDRESS (CITY, STATE, ZIP)																				
ST. LOUIS, MO																				
SAMPLE		SL NO.	SAMPLE IDENTIFICATION			AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS LIQUID (solvent etc.) LIQUID	NUMBER OF CONTAINERS SUBMITTED												REMARKS	
DATE	TIME						Cool	Cool	Cool	Cool	Cool	Cool	Cool	Cool	Cool	TCC	TC-T	TC-EPA	VITIN 6290	TCC
10-7-99	0930a		DPL-CSF-S2			X	3	1	1	1	1	1	1	1						
10-7-99	7:30p		SED-CSF-S1			X	3	1	1	1	1	1	1	1						
10-7-99	11:30p		SED-CSF-S2			X	3	1	1	1	1	1	1	1						
10-7-99	11:30a		SED-CSF-S3			X	2	1	1	1	1	1	1	1						
10-7-99	-		TRIP BLANK			X	3	NA	→											
10-7-99	-		TEMPERATURE BLANK			X	NA	→												
RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME						
RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME						
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT			CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS										
					<input type="checkbox"/> YES <input type="checkbox"/> NO															

269A-36

CLIENTS FIELD COPY

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS
			<input type="checkbox"/> YES <input type="checkbox"/> NO			

FedEx USA Airbill FedEx
Tracking Number 8155 1526 6114

1 Please print and press hardDate **10-7-99**Sender's FedEx
Account Number

1187-9587-3

Sender's Name **JOSEPH N. PERRY**Phone **(314) 842-4550**Company **O'BRIEN & GERE**Address **5000 CEDAR PLAZA PKWY STE 211**

Dept/Floor/Suite/Rm

City **SAINT LOUIS** State **MO** ZIP **63128**2 Your Internal Billing Reference **2354B ECOLOGICAL SEO. SAMPLING**3 To
Recipient's Name **BETSY BEAVCHAMP** Phone **(912) 354-7858**Company **SAVANNAH LABORATORIES**Address **5102 LA ROCHE AVE**

Dept/Floor/Suite/Rm

We cannot deliver to APO or FPO ZIP codes.

City **SAVANNAH** State **GA** ZIP **31404****NEW Pixel and Stick FedEx USA Airbill**

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and in our current Service Guide, including terms that limit our liability.

0111962862

SDA11

0215

4a Express Package Service

 FedEx Priority Overnight
Next business morning FedEx Standard Overnight
Next business afternoon FedEx First Overnight
Excludes next business morning delivery to select locations FedEx 2Day®
Second business day FedEx Express Saver®
Third business day* FedEx Lesser Rate not available
Minimum charge One pound rate

4b Express Freight Service

 FedEx 10Day Freight®
Next business day FedEx 2Day Freight
Second business day FedEx 30Day Freight
Third business day

* Call for Confirmation

* Declared value limit \$250

5 Packaging

 FedEx Letter® FedEx Pak® Other Pkg.
Includes FedEx Box, FedEx Tube, and customer packaging

6 Special Handling

 Saturday Delivery
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes Sunday Delivery
Available for FedEx Priority Overnight to select ZIP codes HOLD Wednesday at FedEx Location
Not available with FedEx First Overnight

Does this shipment contain dangerous goods?

On business days checked No Yes
per selected
Shipper's Declaration
not required Yes
Shipper's Declaration
not required Dry Ice
Dry Ice, CO₂, LN₂, etc. Cargo Aircraft Only

7 Payment B/W:

 Sender
Acct No. in Section 1
will be billed Recipient Third Party Credit Card Cash/Check

FedEx Acct No.

Credit Card No.

Exp Date

Total Packages	Total Weight	Total Declared Value
1	4lb	\$ 00

Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Release Signature: Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

[359]

CLIENT CHAIN OF CUSTODY

SAMPLER'S

SIGNATURE Joseph W. Peny

Project/Quote 04939/96 J01069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141
Project (1): Saugel Area 1 Support Sampling

Contact: Mr. Alan Cork
Phone: 314-674-3402
Fax: 314-674-8957
P.O.# (1): _____

Analysis Wanted (2):
(628) NIXOJ

Total Number of
Containers:
10

Turn Around Time
(In Calendar Days):

(SOL05 /FMS)

Data to be reported to the state of MO.

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.			Remarks
SED-CSF-S3-02FT	10/7/99 1130	Cool	Sediment	1 l	X		
SED-CSF-S2-0.2FT	10/7/99 1630	Cool	Sediment	1 l	X		
SED-CSF-S1-0.2FT	10/7/99 1530	Cool	Sediment	1 l	X		
BPLESED-S2-0.2FT	10/7/99 0930	Cool	Sediment	1 l	X		
EEG-106	10/7/99 1010	Cool Na ₂ SO ₄	Ground Water	2 l	X		
EEG-107	10/7/99 1600	Cool Na ₂ SO ₄	Ground water	2 l	X		
EEG-107	10/7/99 1420	Cool Na ₂ SO ₄	Ground water	2 l	X		

Relinquished By/Sign.

Date/Time

Received By/Sign.

Relinquished By/Sign.

Date/Time

Received By/Sign.

Joseph W. Peny

10/7/99 1900

Fed X #815747919634

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitola Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.
(2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

FedEx USA Airbill FedEx Tracking Number 8157 4791 9634

1 From Please print and press hard
Date 10/7/95 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Cork Phone (314) 842-4550
Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Floor/Suite/Room
City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Any 20 characters will appear on invoice 235A8 030.001

3 To
Recipient's Name Frank Stevens Phone ()

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR Dept./Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. Box codes

To "HOLD" at FedEx location,
print FedEx address here.
City DURHAM State NC ZIP 27713

NEW Pack and Ship FedEx USA AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

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and in our current Service Guide, including terms that limit our liability.

0111963289

SDA21

0215

4a Express Package Service		Packages up to 150 lbs. Delivery commitment may be later in some areas
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning <input type="checkbox"/> FedEx Standard Overnight Next business afternoon <input type="checkbox"/> FedEx First Overnight Earlier next business morning delivery to select locations		
<input type="checkbox"/> FedEx 2Day* Second business day <input type="checkbox"/> FedEx Express Saver* Third business day		* FedEx Letter Rate not available Minimum charge One pound rate
<input type="checkbox"/> FedEx 1Day Freight* Next business day <input type="checkbox"/> FedEx 2Day Freight Second business day <input type="checkbox"/> FedEx 3Day Freight Third business day		Packages over 150 lbs. Delivery commitment may be later in some areas
* Call for Confirmation		
5 Packaging		* Declared value limit \$500
<input type="checkbox"/> FedEx Letter* <input type="checkbox"/> FedEx Pak*		<input checked="" type="checkbox"/> Other Pkg. Includes FedEx Box, FedEx Mail, and customer pkg
6 Special Handling		
<input type="checkbox"/> Saturday Delivery <input type="checkbox"/> Sunday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes Available for FedEx Priority Overnight to select ZIP codes		
<input type="checkbox"/> HOLD Weekday at FedEx Location <input type="checkbox"/> HOLD Saturday at FedEx Location Not available with FedEx First Overnight Available for FedEx Priority Overnight and FedEx 2Day to select locations		
Does this shipment contain dangerous goods? Dangerous Goods cannot be shipped in FedEx packaging		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes As per attached Shipper's Declaration not required <input type="checkbox"/> Yes Shipper's Declaration not required		
<input type="checkbox"/> Dry Ice Dry Ice, UN 1945 <input type="checkbox"/> Cargo Aircraft Only		
7 Payment Bill to:		
<input checked="" type="checkbox"/> Sender Acct No. 6 Section will be billed <input type="checkbox"/> Recipient <input type="checkbox"/> Third Party <input type="checkbox"/> Credit Card <input type="checkbox"/> Cash/Check		
FedEx Acct No Credit Card No Exp Date		
Total Packages	Total Weight	Total Declared Value*
1	51	\$ 00
Our liability is limited to \$100 unless you declare a higher value. See back for details		

359

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

FedEx Use Only

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Cheri J. Lippson

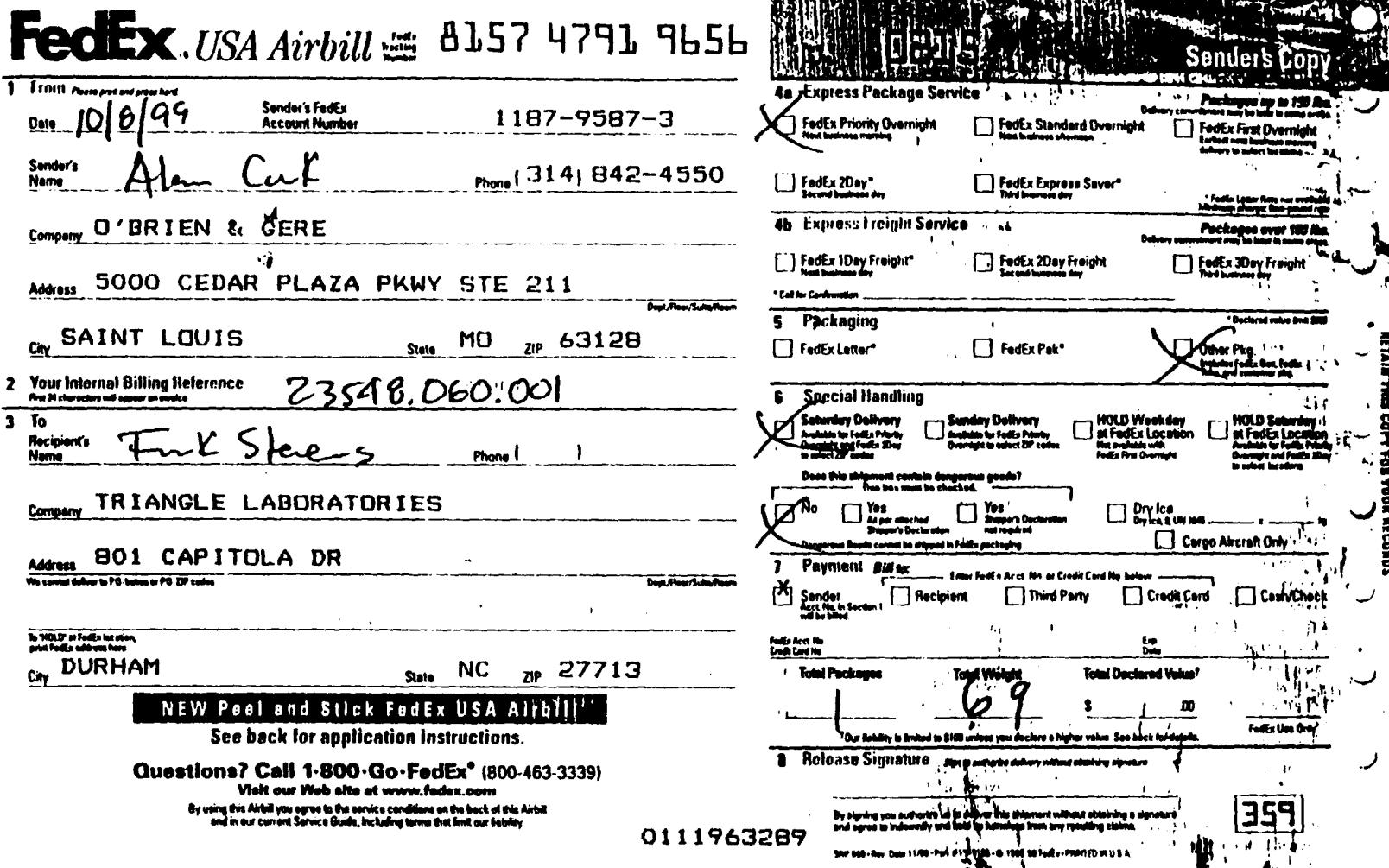
Project/Quote 04939/9900001069

CLIENT CHAIN OF CUSTODY		SAMPLER'S SIGNATURE					
From (1): Solutia, Inc. 575 Maryville Center Drive St. Louis, MO 63141		Contact: Mr. Alan Cork Phone: 314-674-3402 Fax: 314-674-8957 P.O.# (1): _____		Analysis Wanted (2): <i>Dioxin (PCDD/PCDF)</i>		Total Number of Containers:	
Project (1): Sauget Area 1 Support Sampling (SOL05 /FMS)						Turn Around Time (In Calendar Days):	
		Data to be reported to the state of MO.					
Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.			Remarks
SW-RA2-S1 Creek	10/8/99 1640	Cool, N ₂ S ₂ O ₃	Surface Water	2 L	X		
SW-RA1-S1	10/8/99 1000	"	"	"	X		
SED-RA2-S1 EB	10/8/99 1330	"	Water	"	X		
SW-RA1-S2	10/8/99 1130	"	Surface water	"	X		
SED-RA2-S1	10/8/99 1600	Cool	Sediment	1/2L	X		
SED-RA2-S1-FD	10/8/99 1600	Cool	"	1 l	X		
SED-RA1-S1	10/8/99 0930	Cool	"	1 l	X		
SED-RA1-S1-MS	10/8/99 0930	Cool	"	1 l	X		
SED-RA1-S1-MD	10/8/99 0930	Cool	"	1 l	X		
SED-RA1-S2	10/8/99 1130	Cool	g	1 l	X		
Relinquished By/Sign.		Date/Time	Received By/Sign.	Relinquished By/Sign.		Date/Time	Received By/Sign.
<i>Cheri J. Lippson</i>		10/8/99 2000	FedEx #815747919656				
Received for Laboratory By/Signature		Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491				

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
- (4) Please indicate the preservation used for each sample.





SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 414 SW 12th Avenue, Deerfield Beach, FL 33442
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone:** (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (954) 421-7400 **Fax:** (954) 421-2584
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 764-1100 **Fax:** (504) 725-1163

RELINQUISHED BY: (SIGNATURE)

DATE 10-8-99

RELINQUISHED BY: (SIGNATURE)

DATE **TIM**

RELINQUISHED BY: (SIGNATURE)

DATE	TIME
------	------

RECEIVED BY: (SIGNATURE)
FEB 21 1985 ON FALNERS

DATE	TIME
10.8.99	9:30

RECEIVED BY: (SIGNATURE)

DATE **TIME**

RECEIVED BY: (SIGNATURE)

DATE **TIME**

THE CHINESE JOURNAL OF APPLIED ECOLOGY AND ENVIRONMENTAL SCIENCE, Vol. 25, No. 5, October 2013

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THE WORST MURDERER

DIARY DESIGN

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FedEx USA Airbill

8155 1526 6217

1 From Please print and press hard

Date 10-8-99

Sender's FedEx
Account Number

1187-9587-3

Sender's
Name

JOSEPH W. AGRRY

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept./Floor/Suite/Room

City SAINT LOUIS

State MO

ZIP 63128

2 Your Internal Billing Reference

Max 10 characters will appear on invoice

23548 Ecol. Sec. Sampling

3 To

Recipient's
Name

Betsy Beachamp

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE

Dept./Floor/Suite/Room

To HOLD at FedEx location,
print FedEx address here.

City SAVANNAH

State GA

ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111962862



Sender's Copy

4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

Packages up to 100 lbs.
Delivery commitment may be later in some areas.
FedEx First Overnight
Earliest next business morning
Delivery to selected locations

FedEx 2Day®
Second business day

FedEx Express Saver®
Third business day

* FedEx Express Saver® not available
Minimum charge One pound per item

4b Express Freight Service

FedEx 10Day Freight®
Next business day

FedEx 20Day Freight
Second business day

Packages over 100 lbs.
Delivery commitment may be later in some areas.
FedEx 30Day Freight
Third business day

* Call for Confirmation

5 Packaging

FedEx Letter®

FedEx Pak®

* Declared value limit \$100
Includes FedEx Box, FedEx
Box, and customer ship

Other Pkg

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes
Not available with
FedEx First Overnight

HOLD Weekday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No

Yes
As per attached
Shipper's Declaration
not required

Dry Ice
Dry Ice, UN 1845
 Cargo Aircraft Only

7 Payment Bill to:

Sender
Acct. No. in Section 1
will be billed

Recipient
 Third Party

Credit Card
 Cash/Check

FedEx Acct. No.
Credit Card No.

Exp Date

Total Packages

Total Weight

Lbs

1

52

\$.00

FedEx Use Only

* Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

359



**SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 101040
- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER	MATRIX TYPE	REQUIRED ANALYSES										PAGE / OF									
Solutia - Sargent Area 1		23548	Direct Bill to Solutia																					
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	(314) 642-4550																					
IL	Joseph W. Perry	FAX	(314) 842-3266																					
CLIENT NAME		CLIENT PROJECT MANAGER																						
Solutia		Kimberly Perry - Solutia																						
CLIENT ADDRESS (CITY, STATE, ZIP)		St. Louis, MO																						
SAMPLE		SAMPLE IDENTIFICATION			PRESERVATIVE																			
DATE	TIME	NO.			ACID WATER	ALKALI WATER	ALKALI SEMI- LIQUID	ALKALI LIQUID	CHLORIDE WATER	CHLORIDE SEMI- LIQUID	CHLORIDE LIQUID	CHLORINE WATER	CHLORINE SEMI- LIQUID	CHLORINE LIQUID	CYANIDE WATER	CYANIDE SEMI- LIQUID	CYANIDE LIQUID	PERST. WATER	PERST. SEMI- LIQUID	PERST. LIQUID	T.C. WATER	T.C. SEMI- LIQUID	T.C. LIQUID	
10-8-99	9:30a		SED-RA1-S1	X	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	9:30a		SED-RA1-S1 MS	X	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	9:30a		SED-RA1-S1 MSD	X	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	11:30a		SED-RA1-S2	X	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	4:00p		SED-RA2-S1	X	3	1	X	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	4:00p		SED-RA2-S1 DUPLICATE	X	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1		
10-8-99	-		TRIP BLANK	X	3	NA	→																	
10-8-99	-		TEMPERATURE BLANK	X	NA	→																		
10-8-99	3:30p		SED-RA2-S2	X	3	NA	→																	
269A-44																								

RELINQUISHED BY: (SIGNATURE) <i>S. M. JAY CONFERNERS</i>	DATE 10-8-99	TIME 9:30a	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE) <i>FENEX 8155 152618473</i>	DATE 10-8-99	TIME 9:30p	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LOG NO.	LABORATORY REMARKS
			YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>			

CLIENTS FIELD COPY

269A-45

FedEx USA Airbill

FedEx
Tracking
Number

8155 1526 6147

1 From Please print and press hardDate **10-8-99**Sender's FedEx
Account Number**1187-9587-3**Sender's Name **Joseph W. Peery**Phone **(314) 842-4550**Company **D'OBRIEN & GERE**Address **5000 CEDAR PLAZA PKWY STE 211**

Dept./Floor/Suite/Room

City **SAINT LOUIS**State **MO**ZIP **63128**

2 Your Internal Billing Reference

First 4 characters will appear on invoice

23548 Ecol. Sed. SamplingPhone **(912) 354-7858**

3 To

Recipient's Name **Betsy Beuchamp**Phone **(912) 354-7858**Company **SAVANNAH LABORATORIES**Address **5102 LA ROCHE AVE**

Dept./Floor/Suite/Room

We cannot deliver to PO Boxes or PO ZIP codes

To "HOLD" at FedEx location,
print FedEx address here.City **SAVANNAH**State **GA**ZIP **31404****NEW Peel and Stick FedEx USA Airbill**

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)Visit our Web site at www.fedex.comBy using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability**O 1 1 9 6 2 8 6 2**

4a Express Package Service

 FedEx Priority Overnight
Next business morning FedEx Standard Overnight
Next business afternoon FedEx First Overnight
Last night delivery, morning delivery to select locations**Packages up to 150 lbs.**
Delivery commitment may be later in some areas FedEx 2Day*
Second business day FedEx Express Saver*
Third business day*** FedEx Letter Rate not available
Minimum charge. One-pound rate**

4b Express Freight Service

 FedEx 1Day Freight*
Next business day FedEx 2Day Freight
Second business day FedEx 3Day Freight
Third business day**Packages over 150 lbs.**
Delivery commitment may be later in some areas

*Call for Confirmation

5 Packaging

 FedEx Letter* FedEx Pak**** Declared value limit \$200** Other Pkg.
Includes FedEx Box, FedEx
Tube, and customer pkg

6 Special Handling

 Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

One line must be checked No Yes
As per attached
Shipper's Declaration Dry Ice
Dry Ice, & UN 1845Shipper's Declaration not required Cargo Aircraft OnlyDangerous Goods cannot be shipped in FedEx packaging

7 Payment Bill to:

 Sender
Acct No. in Section 1
will be billed Recipient Third Party Credit Card Cash/CheckFedEx Acct. No.
Credit Card No.

Exp. Date

Total Packages

Total Weight

Total Declared Value

1**62****\$ 00.00**

*Our liability is limited to \$100 unless you declare a higher value. See back for details.

FedEx Use Only

8 No-Show Signature

Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.**359**

RETAIN THIS COPY FOR YOUR RECORDS



SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 12 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (800) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (954) 421-7400 Fax: (954) 421-2584
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES										PAGE	OF	
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE (311) 617-1550				ACQUEOUS (WATER)	LIQUID (oil, solvent, etc.)	LIQUID (650)	T (500)	T (500)	CYANIDE (815A)	METALS (90102)	METALS (6902)	T (473)	T (500)		
IL	Christie Menzie	FAX (311) 812-3266			SOLIDS (8270C)	AIR	T (650)	T (500)	T (500)	METALS (815A)	METALS (6902)	METALS (6902)	T (473)	T (500)			
CLIENT NAME		CLIENT PROJECT MANAGER													<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY		
Sulphur		Kimberly Parry-Sulphur													<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)		
CLIENT ADDRESS (CITY, STATE, ZIP)		St Louis, Mo													Date Due		
SAMPLE		SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED										REMARKS	
DATE	TIME				X	1	1	1	1	1	1	1	1	1			
10/9/94	1030		SED-RAZ-S2														
269A-46																	
10/9/94		-		TEMP BLANK		X											
RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME			
								10/9/94	0600				10/11/94	1800			
RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME			
								10/9/94	0600				10/11/94	1800			
LABORATORY USE ONLY																	
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:										
				<input type="checkbox"/> YES	<input type="checkbox"/> NO												

FedEx USA Airbill 8155 1526 6294

0215



1 Initial Prepaid Freight
Date **10/11/94** Sender FedEx
Name **Alex Clark** Account Number
1187-9587-3

Company **O'BRIEN & CERE**
Address **5000 CEDAR PLAZA PKWY STE 211** Suite **MO** ZIP **63128**
Dept/Room/Box

2 **Your Initial Billing Reference**
23516 050.008

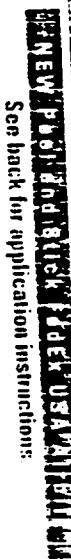
3 In **SAINT LOUIS** Recipient's Name **Bebby Beuchner** Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**
Address **5102 1/2 ROCHE AVE** Suite **MO** ZIP **31404**
Dept/Room/Box

4 **Ship Date** **10/11/94** **Bill To** **SAVANNAH**
We cannot guarantee delivery to or from

Initial Prepaid Freight

Initial Prepaid Freight



See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill

and in our current Service Guide, including terms that limit our liability

0111962862

269A-47

- FedEx Priority Overnight** **FedEx Standard Overnight**
Delivery commitment may be up to 100 hours
from time of shipping
- FedEx Express Saver®** **FedEx First Overnight**
Delivery commitment may be up to 100 hours
from time of shipping
- FedEx 2 Day Freight®** **FedEx 3 Day Freight**
Delivery commitment may be up to 100 hours
from time of shipping
- FedEx Letter®** **FedEx Pak®**

Packaging
* See back for details

Priority Mail®

Small包裹

Standard Mail®

Priority Mail International®

Small包裹 International®

Standard Mail International®

Priority Mail International®

RETAIN THIS COPY FOR YOUR RECORDS

Total Packages **1** Total Weight **14** Total Declared Value **\$ 00.00**
For delivery or return to FedEx offices or facilities. See back for details.

Prepaid Signature **Signature** See back for details

Prepaid signature is to deliver this shipment without retaining a signature
and sign for it personally and hold it personally from my recipient.
See back for details.

359

FedEx USA Airbill

FedEx
Tracking
Number
8157 4791 9586

0215

8RA21

1 From Account and name

Date 10/11/99

Sender's FedEx
Account Number

1187-9587-3

Sender's Name TOMY FINCH

Phone 314 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS

State MO

ZIP 63128

2 Your Internal Billing Reference

First 24 characters will appear on invoices

23518.020.005

3 To

Recipient's Name

Frank Stevens

Phone 1 1

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR

We cannot deliver to P.O. Boxes or P.O. ZIP codes

Dept./Floor/Suite/Rm

In 140 ZIP or FedEx location
print FedEx address type
DURHAM

State NC

ZIP 27713

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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and in our current Service Guide, including terms that limit our liability.

0111963289

4a Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

Packages up to 150 lbs.

Delivery commitment may be later in some areas.
 FedEx First Overnight
(select next business morning delivery to select locations)

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx Letter Rate not available
Minimum charge: One-pound rate

4b Express Freight Service

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

Packages over 150 lbs.
Delivery commitment may be later in some areas.
 FedEx 3Day Freight
Third business day

* Call for Confirmation

5 Packaging

FedEx Letter*

FedEx Pak*

Other **kg**
Other packaging FedEx
includes padded FedEx
customer ship

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Weekly Day
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Drops this shipment contain dangerous goods?

No Yes
As per attached
Shipper's Declaration
not required

Dry Ice
Dry Ice \$1.00/lb Cargo Aircraft Only

Payment Bill to:

Sender
Check box in Section 1
will be checked

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Total Packages

Total Weight

Total Declared Value*

\$ 00

FedEx Use Only

* Our liability is limited to \$100 unless you declare a higher value. See back for details

By signing you authorize us to deliver this shipment without obtaining a signature

359

000 000 - Rev Date 11/00 - Part #1540126 - © 1994 FedEx - PRINTED IN U.S.A.

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**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE SOLUTIA, INC AREA 1		PROJECT NO. 23348	P.O. NUMBER BILL DIRECTLY TO SOLUTIA	MATRIX TYPE	REQUIRED ANALYSES						PAGE 1 OF 1	
PROJECT LOC. (State) IL	SAMPLER(s) NAME NICK JENKINS	PHONE	FAX	AQUEOUS (WATER) SOLID OR SEMI-SOLID NONAQUEOUS LIQUID (oil, solvents) AIR	COPPER (546721)	ZINC (54721)	TOC 8050	TPH - OIL & GREASE	LEAD 1000	CHLORIDE	PHOSPHATE	STANDARD REPORT DELIVERY <input checked="" type="checkbox"/>
CLIENT NAME SOLUTIA, INC	CLIENT PROJECT MANAGER K. PERRY				COOL	COOL	COOL	COOL				EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/>
CLIENT ADDRESS (CITY, STATE, ZIP) ST. LOUIS, MO												Date Due:
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED						REMARKS	
DATE	TIME				1	1	1	1	1	1		
11-00	0900		FASED-CSF-S1E-0-8 ETV		X	1	1	1	1	1		
11-00	1000		FASED-CSF-S2-07 INCHES		X	1	1	1	1	1		
11-00	1100		FASED-CSF-S3E-0-6"		X	1	1	1	1	1		
11-00	1200		FASED-CSF-S4-0-7"		X	1	1	1	1	1		
11-00	1450		FASED-CSF-S5W-0-10"		X	1	1	1	1	1		
11-00	1515		FASED-CSF-S6E-0-10"		X	1	1	1	1	1		
11-00	1610		FASED-CSF-S7E-0-11"		X	1	1	1	1	1		
11-00		—	TEMP BLANK		X							
REINQUISITION BY: (SIGNATURE) <i>Holay S Jenkins</i>			DATE 11-00	TIME 1:00	REINQUISITION BY: (SIGNATURE)		DATE	TIME	REINQUISITION BY: (SIGNATURE)		DATE	TIME
RECEIVED BY: (SIGNATURE) <i>FED EX: 817094232491</i>			DATE 11-00	TIME 1900	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME
LABORATORY USE ONLY												
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:					
				<input type="checkbox"/> YES <input type="checkbox"/> NO								

FedEx USA Airbill FedEx
Tracking
Number 8170 9423 2491

1 From Please print and press hard

Date 1-11-00

Sender's FedEx
Account Number

1187-9587-3

Sender's
Name

COLIN WELLENKAMP

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept./Floor/Suite/Rm.

City SAINT LOUIS

State MO ZIP 63128

2 Your Internal Billing Reference:

Fax 20 characters will appear on invoice

3 To:

Recipient's
Name

BETSY BEAUCHAMP

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept./Floor/Suite/Rm.

In HOLD at FedEx location
and FedEx addressed here

CITY SAVANNAH

State GA ZIP 31404

NEW Peel and Stick FedEx USA AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

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and in our current Service Guide, including terms that limit our liability

0119392773

SIDAY
Sender's Copy

4a Express Package Service

Packages up to 700 lbs.

Delivery commitment may be later in some areas

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Early next business morning
Delivery to select locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx's Later Rate not available
Minimum charge One pound rate

4b Express Freight Service

Packages over 100 lbs.

Delivery commitment may be later in some areas

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

* Call for Confirmation

* Declared value limit \$500

5 Packaging

FedEx Letter*

FedEx Pak*

Other Pkg.
Includes FedEx Box, FedEx
Bag, and customer pkg.

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
in select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight in select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
in select locations

Does this shipment contain dangerous goods?
This box must be checked

No

Yes
As per attached
Shipper's Declaration
not required

Yes
Shipper's Declaration
not required

Dry Ice
Dry Ic., 9 UN 1845

Cargo Aircraft Only

7 Payment Bill to:

Sender
Accts. in Current
and Due Now

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Total Packages

Total Weight

Total Declared Value?

1 44 \$ 00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Release Signature

Sign to evidence delivery without addressing signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

SRP 1149 Rev. 11-98 Part #1540135 © 1994 FedEx Corp. Printed in U.S.A.

359

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SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6698
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 764-1100 **Fax:** (504) 725-1163

FedEx USA Airbill

8170 9423 2653

1 From Please print and press hard
Date /12-00 **Sender's FedEx Account Number** 1187-9587-3

Sender's Name COLIN WELLENKAMP **Phone** (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept./Name/State/Zip

City SAINT LOUIS **State** MO **ZIP** 63128

2 Your Internal Billing Reference
First 24 characters will appear on invoice

3 To
Recipient's Name BETSY BEAUCHAMP **Phone** (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

We cannot deliver to PO Boxes or PO ZIP codes

Dept./Name/State/Zip

To HOLD at FedEx location, print FedEx address here
CITY SAVANNAH **STATE** GA **ZIP** 31404

NEW PUB and SIGHTSEEING TOURS

See back for application instructions

Questions? Call 1-800-Go-FedEx[®] (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

01102007777

0215

Packages up to 150 lbs.		
<small>Delivery commitment may be later in some areas</small>		
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning	<input type="checkbox"/> FedEx Standard Overnight Next business afternoon	<input type="checkbox"/> FedEx Fast Overnight Earlier next business morning delivery to selected locations
<input type="checkbox"/> FedEx 2Day* Second business day	<input type="checkbox"/> FedEx Express Saver* Third business day	<small>* FedEx Letter rate not available Minimum charge One pound plus</small>
Packages over 150 lbs.		
<small>Delivery commitment may be later in some areas</small>		
<input type="checkbox"/> FedEx 1Day Freight* Next business day	<input type="checkbox"/> FedEx 2Day Freight Second business day	<input type="checkbox"/> FedEx 3Day Freight Third business day
<small>* Call for information</small>		
5 FedEx Pkg		
<small>* This tariff applies from \$500</small>		
<input type="checkbox"/> FedEx Letter* Includes FedEx Box, FedEx Tube, and Customer Pkg	<input type="checkbox"/> FedEx Pak*	<input checked="" type="checkbox"/> Other Pkg Includes FedEx Box, FedEx Tube, and Customer Pkg

6 Special Delivery			
<input type="checkbox"/> Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes	<input type="checkbox"/> Sunday Delivery Available for FedEx Priority Overnight through to select ZIP codes	<input type="checkbox"/> HOLD Weekday At FedEx Location Not available with FedEx Fast Overnight	<input type="checkbox"/> HOLD Saturday At FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
<small>Does this shipment contain dangerous goods?</small>			
<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <small>As per attached Shipper's Declaration not required</small>	<input type="checkbox"/> Yes <small>Shipper's Declaration not required</small>	<input type="checkbox"/> Dry Ice Dry Ice & UN 1845
<small>Dangerous Goods cannot be shipped in class 1 of packaging</small>			
<input type="checkbox"/> Cargo Aircraft Only			

7 Payment Bill to:				
<input checked="" type="checkbox"/> Sender Add. Info in Section will be added	<input type="checkbox"/> Recipient	<input type="checkbox"/> Third Party	<input type="checkbox"/> Credit Card	<input type="checkbox"/> Cash/Check

FedEx Acct No
Credit Card No

Total Packages	Total Weight	Total Declared Value¹
1	36	\$ 00

1 Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Hold **Sign to acknowledge without delivery signature**

By signing you authorize us to deliver this shipment without obtaining a signature
and a price breakdown, and hold us harmless from any resulting claims

359

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Serial Number 15C J4

**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 6102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Gretna, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES						PAGE OF	
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE			AQUEOUS (WATER) SOLID OR SEMI-SOLID AERIAL	TEST 1	TEST 2	TEST 3	TEST 4	TEST 5	TEST 6	TEST 7
CLIENT NAME		CLIENT PROJECT MANAGER		Kimberly Berry								
CLIENT ADDRESS (CITY, STATE, ZIP)				ST. LOUIS, 1110								
SAMPLE	SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED						REMARKS	
DATE	TIME				1	1	1	1	1	1	1	
11/13/00	1015	FHSED-CSF-515W-0-28"		X	1	1	1	1	1	1	1	
11/13/00	1015	FHSED-CSF-515W-0-28"-HS/MS		X	1	1	1	1	1	1	1	
11/13/00	1140	FHSED-CSF-516-0-23"		X	1	1	1	1	1	1	1	
11/13/00	1500	FHSED-CSF-517W-0-16"		X	1	1	1	1	1	1	1	
11/13/00	1610	FHSED-CSF-518E-0-14"		X	1	1	1	1	1	1	1	
269A54												
11/13/00		Temp Blank		X								
RELINQUISHED BY (SIGNATURE)		DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME			
RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME			
LABORATORY USE ONLY												
CUSTODY INTACT				CO	SEAL NO.		SL LOG NO.	LABORATORY REMARKS:				

FedEx USA Airbill

8170 9423 2506

1 Please print and press hard
 Date 01-13-00 Sender's FedEx Account Number 1187-9587-3

Sender's Name Colin Wellenkamp Phone 314, 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference 23548.050.006
First 24 characters will appear on invoice

3 To
 Recipient's Name BETSY BEAUCHAMP Phone 912, 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE
We cannot deliver to P.O. boxes or P.O. ZIP codes

To "HOLD" at FedEx location,
 print FedEx address here.
SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill!

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of the Airbill
 and in our current Service Guide, including terms that limit our liability

0119392773



4a Express Package Service

Packages up to 150 lbs.

Delivery commitment may be later in some areas

FedEx Priority Overnight FedEx Standard Overnight FedEx First Overnight

Next business morning Next business afternoon FedEx next business morning delivery to select locations

FedEx 2Day* FedEx Express Saver*
Second business day Third business day * FedEx Letter Rate not available Minimum charge One pound rate

4b Liquid Freight Service

Packages over 150 lbs.

Delivery commitment may be later in some areas

FedEx 10Day Freight* FedEx 20Day Freight FedEx 30Day Freight

Next business day Second business day Third business day

* Call for Confirmation * Declared value limit \$500

5 FedEx Baggage FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx Tube, and customer pkg

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day at select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?
 No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, UN 1845 Cargo Aircraft Only
Dangerous Goods cannot be shipped in FedEx packaging

7 Payment Biller Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct No Credit Card No Expiry Date

Total Packages	Total Weight	Total Declared Value
1	22	\$.00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

FDP 1199 Rev Date 11/98 Part #1548125 © 1994 FedEx PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS



**SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE SOUTHERN IND. AREA 1		PROJECT NO. 23548	PO NUMBER REC'D 3/26/97 TO SOUTHERN	MATRIX TYPE	REQUIRED ANALYSES							PAGE / OF /	
PROJECT LOC. (State)	SAMPLER(s) NAME TL	PHONE		AQUEOUS (WATER) SOLID OR SEMI-SOLID LIQUID (solvent etc.) AIR NON-AQUEOUS LIQUID CAN	PCP	TC	OC	ICP	IR	GC	UV	EDTA	
CLIENT NAME SOUTHERN, INC.	K. PEPPER	FAX			PCP	TC	OC	ICP	IR	GC	UV	EDTA	
CLIENT ADDRESS (CITY, STATE, ZIP) ST LOUIS, MO												<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED							REMARKS	
DATE	TIME				X	1	1	1	1	1	1	1	
17-00	0935		FASE1)-CSF-S19-0-13"		X	1	1	1	1	1	1	1	
17-00	1012		FASE1)-CSF-S20-0-12"		X	1	1	1	1	1	1	1	
17-00	1045		FASE1)-CSF-S21-0-14"		X	1	1	1	1	1	1	1	
17-00	1132		FASE1)-CSF-S22E-0-20"		X	1	1	1	1	1	1	1	
17-00	1400		FASE1)-CSF-S23-0-15"		X	1	1	1	1	1	1	1	
17-00	1445		FASE1)-CSF-S24W-0-13"		X	1	1	1	1	1	1	1	
17-00	1045		FASE1)-CSF-S21-0-14" FD		X	1	1	1	1	1	1	1	
17-00	-		TEMP BLANK		X								
RELINQUISHED BY: (SIGNATURE) Savannah		DATE 3/12	TIME 12:00	RELINQUISHED BY (SIGNATURE) John Johnson		DATE 17-00	TIME 1900	RELINQUISHED BY (SIGNATURE)			DATE	TIME	
RECEIVED BY: (SIGNATURE) John Walker		DATE 12-8-97	TIME 1600	RECEIVED BY (SIGNATURE) FEDEX: 81701423264		DATE 17-00	TIME 1900	RECEIVED BY (SIGNATURE)			DATE	TIME	
LABORATORY USE ONLY													
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:							
<input type="checkbox"/> YES <input type="checkbox"/> NO													

FedEx USA Airbill FedEx
Facing Number 8170 94 2664 0119392773 Senders Co.

1 Train Please print and press hard

Date **1/17/00**

Sender's FedEx
Account Number

1187-9587-3

Sender's Name **COLIN WELLENKAMP** Phone **(314) 842-4550**

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

City **SAINT LOUIS** State **MO** ZIP **63128**

2 Your Internal Billing Reference

For 24 characters and appear on invoice

23548.050.006

3 To
Recipient's Name **BETSY BEAUCHAMP**

Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**

Address **5102 LAROCHE AVE**

We cannot deliver to P.O. Boxes or F.D.R. ZIP codes

To HOLD at FedEx location
print FedEx address here

City **SAVANNAH**

State **GA** ZIP **31404**

NEW Peel and Stick FedEx USA AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0119392773

4 Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Excl. Fed. holidays morning
delivery to selected locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

FedEx Letter Rate not available
Minimum charge One pound rate

4b Express Freight Service

FedEx 10Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

* Call for Confirmation

5 Pickup

FedEx Letter*

FedEx Pak*

* Declared value limit \$500

Other Pak
Includes FedEx Box, FedEx
Tube, and customer pick

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight in select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No

Yes
As per attached
Dangerous Declaration
and required

Dry Ice
Dry Ice is UN 1955

Cargo Aircraft Only

7 Payment Bill to:

Sender
All info in Section 1

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Total Packages

Total Weight

Total Declared Value

1

34

\$ 00

Your liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature

Sign to authorize delivery without obtaining a signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

359

SPN 1000 Rev Date 1/1998 Part # 1548175-01 1994 98 FedEx - PRINTED IN U.S.A.

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269A-57



SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Sanjet Area 1</i>		PROJECT NO. <i>23548</i>	P.O. NUMBER <i>Direct Bill to Solutia</i>	MATRIX TYPE	REQUIRED ANALYSES					PAGE 1 OF 1	
PROJECT LOC. (State) <i>JL</i>	SAMPLER(s) NAME <i>Colin Welkenkamp</i>		PHONE FAX	AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS LIQUID COPPER (5IN 7211) ZINC (5IN 1951) FE O3 (480) TPH DAD (SM 2340 G) LEAD (5IN 9160) TIC (5IN 9160) TPH GRO (5IN 803)						STANDARD REPORT DELIVERY <input checked="" type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/>	
CLIENT NAME <i>Solutia, Inc.</i>	CLIENT PROJECT MANAGER <i>Kimberly Perry</i>										
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St. Louis, MO</i>							Date Due:				
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED					REMARKS		
DATE	TIME			1	1	1	1	1			
* 01-18-00	1400	FASED-CSF-S329-0-11"		X	1	1	1	1			
X 01-18-00	1420	FASED-CSF-S33 - 0-10"		X	1	1	1	1			
T 01-18-00	1440	FASED-CSF-S345-0-14"		X	1	1	1	1			
X 01-18-00	1535	FASED-CSF-S36N-0-12"		X	1	1	1	1			
Y 01-18-00	1600	FASED-CSF-S37N-0-13"		X	1	1	1	1			
* 01-18-00	1400	FASED-CSF-S329-0-11" FD		X	1	1	1	1			
* 01-18-00	1535	FASED-CSF-S36N-0-12" FD		X	1	1	1	1			
269A-58											
RElinquished By: (Signature) <i>J. Smith</i>	DATE <i>1/19/99</i>	TIME <i>12:00</i>	RElinquished By: (Signature)		DATE <i>1/19/00</i>	TIME <i>1900</i>	RElinquished By: (Signature)		DATE	TIME	
RECEIVED BY: (Signature) <i>J. Smith</i>	DATE <i>1/19/00</i>	TIME <i>12:00</i>	RECEIVED BY: (Signature) <i>ted C</i>		DATE <i>1/19/00</i>	TIME <i>1900</i>	RECEIVED BY: (Signature)		DATE	TIME	
LABORATORY USE ONLY											
RECEIVED FOR LABORATORY BY: (Signature)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:					
<input type="checkbox"/> YES <input type="checkbox"/> NO											

FedEx USA Airbill ~~8170~~ 9423 2686
Flight Tracking Number

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Questions? Call 1-800-Go-FedEx® (800-463-3339)

QuestDollars™ Visit our Web site at www.fedex.com

Do you agree to the service conditions on the back of this form?

THE JOURNAL OF CLIMATE VOL. 17, NO. 10, OCTOBER 2004

580 | 1999 • May | *Journal of Clinical Pharmacy and Therapeutics*

269A-59

FedEx USA Airbill Form No. 1000-Airbill **8170 9423 2675**

Please print and press hard

Date **1-18-00** Sender's FedEx Account Number **1187-9587-3**

Recipient's FedEx Account Number

Sender's Name **NICOLAS E. Jenkins** Phone **(314) 842-4550**

Recipient's Name

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

City **Saint Louis**

State **MO**

ZIP **63128**

Dept./Floor/Suite/Room

2 Value Int'l. L. 1000.00
FedEx character and option add'l.

3 To Recipient's Name **BETSY BEAUCHAMP** Phone **(912) 354-7858**

Company

Address **SAVANNAH LABORATORIES**

City **5102 LAROCHE AVE**

State

ZIP **31404**

Dept./Floor/Suite/Room

We cannot deliver to PO Boxes or P.O. Boxes

or Post Office Boxes

DUMIE

RETAIN THIS COPY FOR YOUR RECORDS

Packages up to 150 lbs.

Delivery commitment may be later in some areas.
 FedEx Priority Overnight FedEx Standard Overnight
Has business day

FedEx Next Business Morning

FedEx 20 Days*

FedEx 5 and business day

FedEx Express Saver*

FedEx 3 Day

FedEx 2 Day

FedEx 1 Day

FedEx Saturday

FedEx Sunday

FedEx 150 lbs.

FedEx 300 lbs.

FedEx 500 lbs.

FedEx 700 lbs.

FedEx 1000 lbs.

FedEx 1500 lbs.

FedEx 2000 lbs.

FedEx 2500 lbs.

FedEx 3000 lbs.

FedEx 3500 lbs.

FedEx 4000 lbs.

FedEx 4500 lbs.

FedEx 5000 lbs.

FedEx 5500 lbs.

FedEx 6000 lbs.

FedEx 6500 lbs.

FedEx 7000 lbs.

FedEx 7500 lbs.

FedEx 8000 lbs.

FedEx 8500 lbs.

FedEx 9000 lbs.

FedEx 9500 lbs.

FedEx 10000 lbs.

FedEx 10500 lbs.

FedEx 11000 lbs.

FedEx 11500 lbs.

FedEx 12000 lbs.

FedEx 12500 lbs.

FedEx 13000 lbs.

FedEx 13500 lbs.

FedEx 14000 lbs.

FedEx 14500 lbs.

FedEx 15000 lbs.

FedEx 15500 lbs.

FedEx 16000 lbs.

FedEx 16500 lbs.

FedEx 17000 lbs.

FedEx 17500 lbs.

FedEx 18000 lbs.

FedEx 18500 lbs.

FedEx 19000 lbs.

FedEx 19500 lbs.

FedEx 20000 lbs.

FedEx 20500 lbs.

FedEx 21000 lbs.

FedEx 21500 lbs.

FedEx 22000 lbs.

FedEx 22500 lbs.

FedEx 23000 lbs.

FedEx 23500 lbs.

FedEx 24000 lbs.

FedEx 24500 lbs.

FedEx 25000 lbs.

FedEx 25500 lbs.

FedEx 26000 lbs.

FedEx 26500 lbs.

FedEx 27000 lbs.

FedEx 27500 lbs.

FedEx 28000 lbs.

FedEx 28500 lbs.

FedEx 29000 lbs.

FedEx 29500 lbs.

FedEx 30000 lbs.

FedEx 30500 lbs.

FedEx 31000 lbs.

FedEx 31500 lbs.

FedEx 32000 lbs.

FedEx 32500 lbs.

FedEx 33000 lbs.

FedEx 33500 lbs.

FedEx 34000 lbs.

FedEx 34500 lbs.

FedEx 35000 lbs.

FedEx 35500 lbs.

FedEx 36000 lbs.

FedEx 36500 lbs.

FedEx 37000 lbs.

FedEx 37500 lbs.

FedEx 38000 lbs.

FedEx 38500 lbs.

FedEx 39000 lbs.

FedEx 39500 lbs.

FedEx 40000 lbs.

FedEx 40500 lbs.

FedEx 41000 lbs.

FedEx 41500 lbs.

FedEx 42000 lbs.

FedEx 42500 lbs.

FedEx 43000 lbs.

FedEx 43500 lbs.

FedEx 44000 lbs.

FedEx 44500 lbs.

FedEx 45000 lbs.

FedEx 45500 lbs.

FedEx 46000 lbs.

FedEx 46500 lbs.

FedEx 47000 lbs.

FedEx 47500 lbs.

FedEx 48000 lbs.

FedEx 48500 lbs.

FedEx 49000 lbs.

FedEx 49500 lbs.

FedEx 50000 lbs.

FedEx 50500 lbs.

FedEx 51000 lbs.

FedEx 51500 lbs.

FedEx 52000 lbs.

FedEx 52500 lbs.

FedEx 53000 lbs.

FedEx 53500 lbs.

FedEx 54000 lbs.

FedEx 54500 lbs.

FedEx 55000 lbs.

FedEx 55500 lbs.

FedEx 56000 lbs.

FedEx 56500 lbs.

FedEx 57000 lbs.

FedEx 57500 lbs.

FedEx 58000 lbs.

FedEx 58500 lbs.

FedEx 59000 lbs.

FedEx 59500 lbs.

FedEx 60000 lbs.

FedEx 60500 lbs.

FedEx 61000 lbs.

FedEx 61500 lbs.

FedEx 62000 lbs.

FedEx 62500 lbs.

FedEx 63000 lbs.

FedEx 63500 lbs.

FedEx 64000 lbs.

FedEx 64500 lbs.

FedEx 65000 lbs.

FedEx 65500 lbs.

FedEx 66000 lbs.

FedEx 66500 lbs.

FedEx 67000 lbs.

FedEx 67500 lbs.

FedEx 68000 lbs.

FedEx 68500 lbs.

FedEx 69000 lbs.

FedEx 69500 lbs.

FedEx 70000 lbs.

FedEx 70500 lbs.

FedEx 71000 lbs.

FedEx 71500 lbs.

FedEx 72000 lbs.

FedEx 72500 lbs.

FedEx 73000 lbs.

FedEx 73500 lbs.

FedEx 74000 lbs.

FedEx 74500 lbs.

FedEx 75000 lbs.

FedEx 75500 lbs.

FedEx 76000 lbs.

FedEx 76500 lbs.

FedEx 77000 lbs.

FedEx 77500 lbs.

FedEx 78000 lbs.

FedEx 78500 lbs.

FedEx 79000 lbs.

FedEx 79500 lbs.

FedEx 80000 lbs.

FedEx 80500 lbs.

FedEx 81000 lbs.

FedEx 81500 lbs.

FedEx 82000 lbs.

FedEx 82500 lbs.

FedEx 83000 lbs.



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

269A-62

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS:

FedEx USA Airbill

FedEx
Tracking
Number
8170 9422 8385

1 From Please print and press hard
Date **1/19/00** Sender's FedEx Account Number **1187-9587-3**

Sender's Name **COLIN WELLENKAMP** Phone **(314) 842-4550**

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

City **SAINT LOUIS** State **MO** ZIP **63128**

2 Your Internal Billing Reference
First 10 characters will appear on invoice **23548.050.00G**

3 To
Recipient's Name **BETSY BEAUCHAMP** Phone **(912) 354-7838**

Company **SAVANNAH LABORATORIES**

Address **5102 LAROCHE AVE**

We cannot deliver to P.O. Boxes or P.O. ZIP codes

City **SAVANNAH** State **GA** ZIP **31404**

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability

0119391431



4a Express Package Service

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Earlier next business morning delivery to select locations

Packages up to 150 lbs.

Delivery commitment may be later in some areas.

FedEx 2Day* Second business day FedEx Express Saver* Third business day

* FedEx Letter Page not available

Minimum charge, One pound rate

4b Express Freight Service

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

Packages over 150 lbs.

Delivery commitment may be later in some areas.

* Call for Confirmation

5 Packaging

FedEx Letter* FedEx Pak* Other Pkg. Includes FedEx Box, FedEx Tube, and customer ship

* Declared value limit \$200

6 Special Handling

Saturday Delivery Available for FedEx Priority (Overnight and FedEx 2Day) to select ZIP codes Sunday Delivery Available for FedEx Priority (Overnight to select ZIP codes) to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority (Overnight and FedEx 2Day) to select locations

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration not required Yes Shipper's Declaration not required Dry Ice Dry Ice, 9.1M lbs Cargo Aircraft Only

Payment Bill to: Enter the account number to be charged for this bill Sender Account No. or Customer No. will be billed Recipient Third Party Credit Card Cash/Check

FedEx Acct No. Or Credit Card No. Exp Date MM YY

Total Packages Total Weight Total Declared Value*

1 **34** **\$ 00**

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Return Signature Sign in ink where delivery method is being signed

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims

SAP 1101-Rev. D-01/98-Part #1540135 © 1994 FedEx - PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone:** (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 764-1100 **Fax:** (504) 725-1183

CLIENTS FIFI & RODV

RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
EMPIRE CONTAINERS		12/99	12:00	John Lewis	20-00	1400			
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
EMPIRE CONTAINERS		12-8-99	12:00	Fenex: 8170 9422 8374	20-00	1400			
LABORATORY USE ONLY									
				CONTAINER INTACT	CONTAINER HEATING				
				<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO				

FedEx USA Airbill 8170 946 8374

1 Print firmly and press hard

Date /-20-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name **COLIN WELLENKAMP** Phone (314) 842-4550

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

City **SAINT LOUIS**

State **MO**

ZIP **63128**

2 Your Internal Billing Reference

First 24 characters will appear on invoice

23548.050.007

3 In

Recipient's Name **BETSY BEAUCHAMP**

Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**

Address **5102 LAROCHE AVE**

We cannot deliver to P.O. Boxes or P.O. ZIP codes

Dept./Div./Sales/Region

City **SAVANNAH**

State **GA**

ZIP **31404**

NEW FedEx STICK FEDEX AIRBILL
See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0119391431

4a Express Package Service

FedEx Priority Overnight

Next business morning

FedEx Standard Overnight

Next business afternoon

FedEx First Overnight

Earliest next business morning delivery to select locations

FedEx 2Day*

2nd and business day

FedEx Express Saver*

3rd business day

Packages up to 150 lbs.
Delivery commitment may be later in some areas

* FedEx Laser Rates not available
Minimum charge: One pound rate

4b Expedited Freight Service

FedEx 10Day Freight*

Non-business day

FedEx 2Day Freight

Second business day

FedEx 3Day Freight

Third business day

* Call for Confirmation

5 Packaging

FedEx Letter*

Small FedEx Box

FedEx Pak*

* Declared value limit \$500

Other Pkg.

Select FedEx Box, FedEx Pak, and customer plug

6 Special Handling

Saturday Delivery

Available for FedEx Priority Overnight and FedEx 2Day in select ZIP codes

Sunday Delivery

Available for FedEx Priority Overnight in select ZIP codes

HOLD Weekly at FedEx Location

Not available with FedEx 2Day or FedEx 3Day

HOLD Saturday at FedEx Location

Not available with FedEx 2Day or FedEx 3Day in select locations

Does this shipment contain dangerous goods?

No

I have checked

Yes

As per attached
Shipping Declaration
and required

Yes

Shipper's Declaration
and required

Dangerous Goods must be shipped in FedEx packaging

Dry Ice

Dry Ice, 9 LIN 1045

Cargo Aircraft Only

7 Payment Bill To:

Sender

Acct # in Carrier
will be billed

Recipient

Third Party

Credit Card

Cash/Check

acct #/acct no
card #/card no

exp. date

total amt.

amt. due

amt. paid

amt. balance

amt. overpaid

amt. underpaid

amt. held

amt. deposited

amt. charged

amt. debited

**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0185
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1183

PROJECT REFERENCE <i>SOLUTIA, SOUTHERN AREA</i>	PROJECT NO. <i>23548</i>	P.O. NUMBER <i>DIRECT BILL TO SOLUTIA</i>	MATRIX TYPE <i>(SW 7211) COLIN WELLERKAMP</i>	REQUIRED ANALYSES						PAGE / OF /	
PROJECT LOC. (State) <i>IL</i>	SAMPLER(s) NAME <i>COLIN WELLERKAMP</i>	PHONE FAX	AQUEOUS(WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS COOL	LIQUID(SOIL) SOLID COLIN (SW 7211)	REFRACTORY SOLID COLIN (SW 7211)	TOC (SW 5055) COLIN (SW 5055)	TPH-GAS COLIN (SW 5055)	COLIN (SW 5055)	COLIN (SW 5055)	COLIN (SW 5055)	COLIN (SW 5055)
CLIENT NAME <i>SOLUTIA, INC.</i>	CLIENT PROJECT MANAGER <i>K. PERRY</i>										
CLIENT ADDRESS (CITY, STATE, ZIP) <i>ST. LOUIS, MO</i>											STANDARD REPORT <input checked="" type="checkbox"/> DELIVERY
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED						REMARKS
DATE <i>1-21-00</i>	TIME <i>1030</i>		FASE10-CSE-S8-0-32"	<input checked="" type="checkbox"/>	1	1	1	1	1	1	
1-21-00	1155		FASE10-CSE-S9-0-31"	<input checked="" type="checkbox"/>	1	1	1	1	1	1	
1-21-00	1030		FASE10-CSE-S8-0-32" MS/MSD	<input checked="" type="checkbox"/>	1	1	1	1	1	1	
<i>269A-66</i>											
<i>1-21-00 - TEMP BLANK</i>											
RELINQUISHED BY: (SIGNATURE) <i>Colin Wellerkamp</i>	DATE <i>1/21/00</i>	TIME <i>1030</i>	RELINQUISHED BY: (SIGNATURE) <i>Colin Wellerkamp</i>	DATE <i>1-21-00</i>	TIME <i>1030</i>	RELINQUISHED BY: (SIGNATURE)				DATE <i>1-21-00</i>	TIME <i>1030</i>
RECEIVED BY: (SIGNATURE) <i>Kerry E. Perry</i>	DATE <i>1/21/00</i>	TIME <i>1030</i>	RECEIVED BY: (SIGNATURE) <i>Kerry E. Perry</i>	DATE <i>1/21/00</i>	TIME <i>1030</i>	RECEIVED BY: (SIGNATURE)				DATE <i>1/21/00</i>	TIME <i>1030</i>
LABORATORY USE ONLY											
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:					
<input type="checkbox"/> YES <input type="checkbox"/> NO											

SDA12



1 Please print and press hard
Date 1-21-00 Sender's FedEx Account Number 1187-9587-3

Sender's Name COLIN WELLENKAMP Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference 23548.050.007
First 24 characters will appear on invoice

3 To Recipient's Name BETSY BEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes Dept/Floor/Suite/Room

In "HOLD" at FedEx location,
print FedEx address here
City SAVANNAH State GA ZIP 31404

NEW AIRBILL STICKER HERE PLEASE

See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of the Airbill
and in our current Service Guide, including terms that limit our liability

0119391431

Form ID No. 0215

4a FedEx Priority Overnight FedEx Standard Overnight FedEx First Overnight
Delivery commitment may be later in some areas
Next business morning Next business afternoon Eastern next business morning delivery to collect for others

FedEx 2Day* FedEx Express Saver*
Second business day Third business day

Packages up to 150 lbs.
* FedEx Letter Rate not available Minimum charge One pound rate

4b FedEx 1Day Freight* FedEx 2Day Freight FedEx 3Day Freight
Next business day Second business day Third business day

Packages over 150 lbs.
Delivery commitment may be later in some areas

* Call for Confirmation FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx Tube, and Customer Pkg

5 Saturday Delivery Sunday Delivery HOLD Weekday at FedEx Location HOLD Saturday at FedEx Location
Available for FedEx Priority Overnight in select ZIP codes Not available with FedEx First Overnight Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Does this shipment contain dangerous goods?
 No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, 9.1IN 1045 Cargo Aircraft Only
Dangerous Goods cannot be shipped in FedEx packaging

6 Bill to:
 Sender Recipient Third Party Credit Card Cash/Check
Acct No. in Section 1 will be used

7 FedEx Acct No. Credit Card No. Exp Date
Total Packages 1 Total Weight 22 Total Declared Value \$.00
FedEx Use Only

8 Hold Sign in an alternate delivery without affixing signature
Our liability is limited to \$100 unless you declare a higher value. See back for details

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

SRP 1190 - Rev. Date 11/98 Part #1540115-1 1994-98 © FedEx PRINTED IN U.S.A.

RETAIN THIS COPY FOR YOUR RECORDS

359

269A-67

**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

C 102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER	MATRIX TYPE	REQUIRED ANALYSES						PAGE / OF /	
PROJECT LOC. (State) IL		SAMPLER(s) NAME COLIN KILLEEN/KWV	PHONE FAX	AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS LIQUID (Oil, Solvent, etc.)	ANALYSES						STANDARD REPORT DELIVERY <input checked="" type="checkbox"/>	
CLIENT NAME SOLARITY, INC		CLIENT PROJECT MANAGER K. PERRY			ANALYSES						EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/>	
CLIENT ADDRESS (CITY, STATE, ZIP) CHICAGO, IL 60615					ANALYSES						Date Due	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED						REMARKS	
DATE	TIME				1	1	1	1	1	1		
X 1-24-00	1110		FASED-CSE-510W-0-21	X	1	1	1	1	1	1		
X 1-24-00	1223		FASEN-CSE-511W-0-22	X	1	1	1	1	1	1		
X 1-24-00	1450		FASEN-CSE-512 -0-21	X	1	1	1	1	1	1		
X 1-24-00	1520		FASEN-CSE-513E-0-21	X	1	1	1	1	1	1		
✓ 1-24-00	1635		FASED-CSE-514W-0-31	X	1	1	1	1	1	1		
269A-68												
1-24-00 TMI BLANK												
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY (SIGNATURE)			DATE	TIME
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RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)			DATE	TIME
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LABORATORY USE ONLY												
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:					
<hr/>				<input type="checkbox"/> YES <input type="checkbox"/> NO			<hr/>					

269A-69

FedEx USA Airbill

Label
Number

8170 9422 8341

1 From Please print and print clearly

Date 1-24-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name COLIN WELLINGAMP Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept/Flor/Suite/Room

SAINT LOUIS MO 63128

State

ZIP 63128

2 Your Internal Billing Reference First 14 characters will appear on invoice

23548.050.007

3 To

Recipient's Name BETSY BEAUCHAMP

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept/Flor/Suite/Room

To HOLD at FedEx location
Print FedEx address here.

SAVANNAH

State GA

ZIP 31404

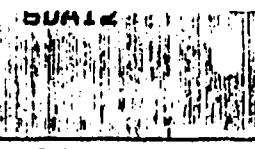
NEW Pool and Stick FedEx USA AIRBILL

See back for application instructions

Questions? Call 1-800-Go-FedEx® (800 463-3339)

Visit our Web site at www.fedex.comBy using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability

0119391431



4a Express Package Service

Packages up to 150 lbs.

Delivery commitment may be later in some areas

 FedEx Priority Overnight

Next business morning

 FedEx Standard Overnight

Next business afternoon

 FedEx First Overnight

Earlier next business morning

Delivery to select locations

 FedEx 2Day*

Second business day

 FedEx Express Saver*

Third business day

* FedEx Letter Rate not available

Minimum charge One pound rate

4b Express Freight Service

Packages over 150 lbs.

Delivery commitment may be later in some areas

 FedEx 1Day Freight*

Next business day

 FedEx 2Day Freight

Second business day

 FedEx 3Day Freight

Third business day

* Call for Confirmation

5 Packaging

* Declared value limit \$50

 FedEx Letter* FedEx Pak* Other Pkg

Includes FedEx Box, FedEx

Tube, and customer packaging

6 Special Handling

 Saturday DeliveryAvailable for FedEx Priority
Overnight and FedEx 2Day
Delivery to select ZIP codes Sunday DeliveryAvailable for FedEx Priority
Overnight to select ZIP codes HOLD WeekdayAt FedEx Location
Not available with
FedEx First Overnight

* Declared value limit \$50

at FedEx Location

Available for FedEx Priority
Overnight and FedEx 2Day
Delivery to select locations

Does this shipment contain dangerous goods?

For more information, see back of this Airbill

 NO Yes
As per attached
Shipper's Declaration Yes
Shipper's Declaration
not required Dry Ice

Dry Ice & UN 1448

* Declared value limit \$50

Cargo Aircraft Only

 I authorize Bill to:

I authorize FedEx to bill my credit card account or my bank account.

 SenderAs per attached
Bill to section RecipientAs per attached
Bill to section Third PartyAs per attached
Bill to section Credit CardAs per attached
Bill to section Cash/Check

I shall be held liable for any damage to my package.

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**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

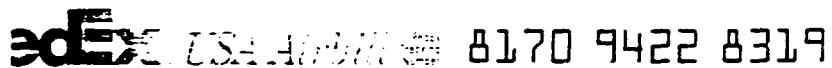
Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	P.O. NUMBER BILLED DIRECTLY TO SOLUT: A	MATRIX TYPE	REQUIRED ANALYSES						PAGE / OF /	
PROJECT LOC. (State)	SAMPLER(S) NAME	PHONE	FAX	AQUEOUS(WATER) LIQUID OR SEMISOLID SOIL AIR	PCT (5%) PCT (5%) PCT (5%) PCT (5%)	TPE (5%) TPE (5%) TPE (5%) TPE (5%)	GPP (5%) GPP (5%) GPP (5%) GPP (5%)	GLP (5%) GLP (5%) GLP (5%) GLP (5%)	GC (5%) GC (5%) GC (5%) GC (5%)	GC (5%) GC (5%) GC (5%) GC (5%)		
CLIENT NAME		CLIENT PROJECT MANAGER		K. PERRY							STANDARD REPORT DELIVERY	
CLIENT ADDRESS (CITY, STATE, ZIP)		ST. LOUIS, MO								<input type="checkbox"/> EXPEDITED REPORT DELIVERY(surcharge)		
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED						REMARKS		
DATE	TIME			1	1	1	1	1	1	1		
X 1-25-00	0405	FASED-CSE-S15-O-19"		X	1	1	1	1	1	1		
X 1-25-00	1105	FASED-CSE-S16E-O-21"		X	1	1	1	1	1	1		
X 1-25-00	1200	FASED-CSE-S17-O-28"		X	1	1	1	1	1	1		
X 1-25-00	1500	FASED-CSE-S18-O-25"		X	1	1	1	1	1	1		
X 1-25-00	1535	FASED-CSE-S19E-O-28"		X	1	1	1	1	1	1		
X 1-25-00	1535	FASED-CSE-S19E-O-28" FO		X	1	1	1	1	1	1		
X 1-25-00	1630	FASED-CSE-S20E-O-33'		X	1	1	1	1	1	1	=	
269A-70												
1-25-00	—	TEMP BLANK		X								
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	
J. Schaffner		1-25-00	9:20	John W. Veling		1-25-00	1100					
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	
John W. Veling		1-25-00	1400	FedEx: 8170-94228314		1-25-00	1900					

LABORATORY USE ONLY

RECEIVED FOR INFORMATION BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	LOG NO.	ANALYTICAL DEMANDS
			<input type="checkbox"/> YES <input type="checkbox"/> NO			

DUAL



0215

Please print and sign here
e 1-25-00 Senders FedEx
Account Number 1187-9587-3

Sender's Name Colin Nellencamp
Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

SAINT LOUIS State MO ZIP 63128

Internal Billing Reference 23548.050.007

BETSY BEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

Not deliver to PO Boxes or P.O. Box addressee

SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0119391431

Form
L.D. No.

4a Express Mail® Services

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

Packages up to 150 lbs.

Delivery commitment not to later than same day*

FedEx First Overnight
earliest next business morning delivery to select locations

4b FedEx Express Saver®

FedEx 2Day®
Second business day

FedEx Express Saver®
Third business day

* FedEx Letter Rate will increase
Minimum charge One-day air

4b Domestic Freight Services

FedEx 10Day Freight®
Next business day

FedEx 2Day Freight
Second business day

Packages over 150 lbs.

Delivery commitment not to later than same day*

FedEx 3Day Freight
Third business day

5 FedEx Pak®

FedEx Letter®

FedEx Pak®

Other Pak®
includes FedEx Box, FedEx
boxed customer and

6 HOLD Services

Saturday Delivery

Sunday Delivery

HOLD Weekday
at FedEx Location

HOLD Saturday
at FedEx Location

Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Available for FedEx Priority
Overnight or select ZIP codes

at FedEx Location
Next business day
FedEx Priority Overnight

Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No

Yes

Other Pak®
includes FedEx Box, FedEx
boxed customer and

As per attached
Shipper's Declaration

Driver's Declaration
not required

Drive Ice
Drive Ice & UN 1845

Dangerous Goods cannot be shipped - FedEx Declares

Drive Ice

Cargo Aircraft Only

7 Payment Bill to:

Sender

Recipient

Third Party

Credit Card

Cash/Check

Credit Card No:

Total Packages

1

Total Declared Value?

\$.00

FedEx Use Only

Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release & Indemnify Sign to authorize delivery without obtaining signature

359

By signing you authorize us to deliver the shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

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SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone:** (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 764-1100 **Fax:** (504) 725-1163

FedEx. USA Airbill

FedEx
Tracking Number
8187 0379 2116

1 From Please print and press hard.

Date **1-26-00** Sender's FedEx
Account Number **1187-9587-3**

Sender's Name **Nicolas E. Jenkins** Phone **(314) 842-4550**

Company **O'BRIEN & GERE**

Address **12250 WEBER HILL RD**

Dept./Floor/Suite/Room

City **SAINT LOUIS**

State **MO** ZIP **63127**

2 Your Internal Billing Reference

First 20 characters will appear on invoice.

23548.050.007

3 To

Recipient's Name **BETSY BEAUBEAUCHAMP** Phone **(912) 354-7858**

Company **SAVANNAH LABRATORIES**

Address **5102 LAROCHE AVE**

To "HOLD" at FedEx location, print FedEx address.

We cannot deliver to P.O. Boxes or F.D. ZIP codes.

Dept./Floor/Suite/Room

City **SAVANNAH**

State **GA** ZIP **31404**

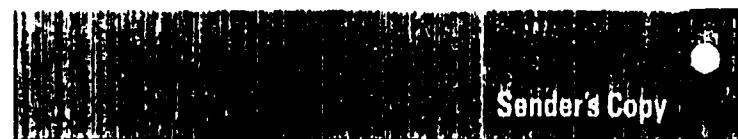
NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and to our current Service Guide, including terms that limit our liability.



4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business day

FedEx First Overnight
Earlier next business morning
delivery to select locations

Packages up to 150 lbs.
Delivery commitment may be later in some areas.

4b Express Freight Service

* Call for Confirmation

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

Packages over 150 lbs.
Delivery commitment may be later in some areas.

5 Packaging

FedEx Envelope/Letter*

FedEx Pak*

Other Pkg.
Includes FedEx Box, FedEx Tube, and Customer Pkg

6 Special Handling

SATURDAY Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

SUNDAY Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Saturday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Does this shipment contain dangerous goods?

No

Yes
As per attached
Shipper's Declaration
not required

Yes
As per attached
Shipper's Declaration
not required

Dry Ice
Only in U.S. UN 1046

Cargo Aircraft Only

7 Payment B/W Accts:

Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct No
Credit Card No

Exp Date

Total Packages **1** Total Weight **34** Total Declared Value* **\$.00**

*Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature Sign to authorize delivery without obtaining a signature

By signing you authorize us to deliver this shipment without obtaining a signature

1359



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
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Phone: (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 784-1100 **Fax:** (504) 725-1163

PROJECT REFERENCE Save + Area I		PROJECT NO. 23548	P.O. NUMBER B-11-0379205 TO Solutia	MATRIX TYPE	REQUIRED ANALYSES				PAGE 1 OF 1
PROJECT LOC. (State) IL	SAMPLER(S) NAME Colin Wellen/Kang	PHONE	FAX						
CLIENT NAME Solutia, INC		CLIENT PROJECT MANAGER K. Perry							<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, MO									<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS LIQUID (oil, solvent, etc.) LIQUID	ice	ice	ice	Date Due:
DATE	TIME								REMARKS
X 1-27-00	0100				X	1	1	1	
X 1-27-00	1115				X	1	1	1	
X 1-27-00	235				X	1	1	1	
X 1-27-00	1605				X	1	1	1	
269A-74									
1-27-00	—								
Temp Blank X									
RELINQUISHED BY: (SIGNATURE) <i>J. Deppeler</i>	DATE 1/29/99	TIME 9:20	RELINQUISHED BY: (SIGNATURE) <i>Colin Wellen</i>	DATE 1-27-00	TIME 10:00	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	
RECEIVED BY: (SIGNATURE) <i>Colin Wellen</i>	DATE 12-1-97	TIME 12:00	RECEIVED BY: (SIGNATURE) <i>Colin Wellen</i>	DATE 1-27-00	TIME 10:00	RECEIVED BY: (SIGNATURE)	DATE	TIME	
INDEX: E187 0379205									

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SI LOG NO. LABORATORY REMARKS:



USA Airbill

Feds
Tracking
Number

8187 0379 2105

0215

1 From *Please print and press here*
 Date 1-27-00 Sender's FedEx Account Number 1187-9587-3

Sender's Name COLIN WELLENKAMP Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

City SAINT LOUIS State MO ZIP 63127

2 Your internal Billing Reference 23548.050.007

3 To
 Recipient's Name BETSY BEAUBEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

To "HOLD" at FedEx location, over FedEx number
1026730793

City SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability

0126730793

4a Express Package Service

- FedEx Priority Overnight FedEx Standard Overnight
Next business day delivery Next business day delivery
- FedEx 2Day* FedEx Express Saver*
Second business day Third business day

4b Express Air Freight Services

- FedEx 1Day Freight* FedEx 2Day Freight
Next business day Second business day
- Call for Commodity

5

- FedEx Envelope Letter* FedEx Pak*

6 Special marks &c

- SATURDAY Delivery SUNDAY Delivery HOLD Weeklyday
Available for FedEx Priority Overnight and FedEx 2Day Available for FedEx Priority Overnight or select ZIP codes At FedEx Location
in select ZIP codes in select ZIP codes FedEx First Overnight

Does this shipment contain dangerous goods?

- No Yes Yes Dry Ice
As per attached Dangerous Goods Declaration Shippers Declaration not required Device & UN 1418 Ca

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment & Bill to:

- Sender Recipient Third Party Credit Card

FedEx Acct. No.
Credit Card No.

Exp Date

Total Packages

Total Weight

Total Declared Value

1

25

\$

.00

*Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature

Sign in audience memory without knowing signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

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FedEx USA AirbillFedEx
Tracking
Number

8187 03 2013

1 From From post and print hereDate **1-28-00**Sender's FedEx
Account Number**1187-9587-3**Sender's
Name**COLIN WELLENKAMP**Phone **(314) 842-4550**Company **O'BRIEN & GERE**Address **12250 WEBER HILL RD**

Dept./Floor/Unit/Room

City **SAINT LOUIS**

State

MO ZIP 63127

2 Your Internal Billing Reference

For N characters will appear on invoice**23548.050.007**

3 To

Recipient's
Name**BETSY BEAUBEAUCHAMP**Phone **(912) 354-7858**Company **SAVANNAH LABRATORIES**Address **5102 LAROCHE AVE**To "HOLD" at FedEx location, print FedEx address

We cannot deliver to P.O. Boxes or P.O. ZIP codes

Dept./Floor/Unit/Room

City **SAVANNAH**

State

GA ZIP 31404**NEW Peel and Stick FedEx USA Airbill**

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)Visit our Web site at www.fedex.comBy using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

Sender's

4a Express Package Service

 FedEx Priority Overnight
New business morning FedEx Standard Overnight
New business afternoonPackages up to 100 lbs.
Delivery commitment may be later in some areas.
FedEx First Overnight
Includes next business morning
delivery to select locations FedEx 2Day®
Second business day FedEx Express Saver®
Third business day* FedEx Envelope Letter Rate not available
Minimum charge for one pound rate

4b Express Freight Service

 FedEx 1Day Freight®
New business day FedEx 2Day Freight
Second business dayPackages over 100 lbs.
Delivery commitment may be later in some areas. FedEx 3Day Freight
Third business day

5 Packaging

 FedEx Envelope/Letter* FedEx Pak®* Declared value limit \$500 Other Pak.
Includes FedEx Box, FedEx
Tube, and Insulated Pak

6 Special Handling

 SATURDAY Delivery SUNDAY DeliveryFor local FedEx address see Section 3Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codesAvailable for FedEx Priority
Overnight in select ZIP codes HOLD Weekday HOLD Saturdayat FedEx Location
Not available with
FedEx First Overnightat FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

Do not pack in glass No YesAs per attached
Shipper's Declaration
not required YesShipper's Declaration
not required Dry Ice Cargo Aircraft OnlyDangerous Goods cannot be shipped in FedEx packagingDry Ice & UN 1945

7 Payment Bill To:

Please Print Name and Address and Card No below Sender Recipient Third Party Credit Card Cash/CheckFedEx Acct No
Credit Card NoExp
Date

Total Packages

Total Weight

Total Declared Value

\$ **00**FedEx Use Only

Your liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature

Sign to authorize delivery without obtaining signature**[359]**

0126730793

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.SPW 0100 Rev. Date 8/99 Fedex USA Airbill © 1999 FedEx Corp. All rights reserved.



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT REFERENCE Sougel Arcal		PROJECT NO. 23548	PROJECT LOCATION (STATE) in	MATRIX TYPE	REQUIRED ANALYSES						PAGE 1 OF 2				
STL (LAB) PROJECT MANAGER B. Beauchamp	P.O. NUMBER Direct Bill to Solutia	CONTRACT NO.			Zinc (Zn)	TOC (SW 7211)	TOC (SW 7211)	TOC (SW 7211)	TOC (SW 7211)	TOC (SW 7211)	TOC (SW 7211)	STANDARD REPORT DELIVERY			
CLIENT (SITE) PM Kimberly Perry	CLIENT PHONE	CLIENT FAX			Lead (Pb)	Lead (Pb)	Lead (Pb)	Lead (Pb)	Lead (Pb)	Lead (Pb)	Lead (Pb)	DATE DUE _____			
CLIENT NAME Solutia Inc.	CLIENT EMAIL				Upper SW 7211	Upper SW 7211	Upper SW 7211	Upper SW 7211	Upper SW 7211	Upper SW 7211	Upper SW 7211	EXPEDITED REPORT DELIVERY (SURCHARGE) 0			
CLIENT ADDRESS St. Louis Mo.					Ice	Ice	Ice	Ice	Ice	Ice	Ice	DATE DUE _____			
COMPANY CONTRACTING THIS WORK (if applicable):													NUMBER OF COOLERS SUBMITTED PER SHIPMENT:		
SAMPLE DATE		SAMPLE IDENTIFICATION TIME			COMPOSITE (G) OR GRAB (G) / INDICATE	AQUEOUS (WATER)	SOLID OR SEMI-SOLID	AIR	NUMBER OF CONTAINERS SUBMITTED						REMARKS
1-31-00	1915	Fused-csd-55-0-10"			X				1	1	1	1			
1-31-00	1940	Fused-csl-57-0-33"			X				1	1	1	1			
	1015	Fused-csd-58-0-29"			X				1	1	1	1			
	1655	Fused-csd-59w-0-23"			X				1	1	1	1		162	
	1120	Fused-csc-s1-0-13"			X				1	1	1	1			
	1210	Fused-csc-s2-0-28"			X				1	1	1	1			
	1210	Fused-csc-s2-0-28" FD			X				1	1	1	1			
	1430	Fused-csc-s3-0-20"			X				1	1	1	1			
	1510	Fused-csc-s4-0-22"			X				1	1	1	1			
	1540	Fused-csc-s5w-0-26"			X				1	1	1	1			
	1540	Fused-csc-s5w-0-26" ms/msd			X				1	1	1	1			
	1620	Fused-csc-s6-0-26"			X				1	1	1	1			
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME				
<i>J. G. V. 1/29/00</i>		1/31/00	1:30	<i>J. G. V. 1/29/00</i>		1/31/00	1:30	<i>J. G. V. 1/29/00</i>		1/31/00	1:30				
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME				
<i>J. G. V. 1/29/00</i>		1/28/00	12:15	Feder 8187 0379 1999		1/31/00	1:30								
LABORATORY USE ONLY															
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL	STL-SL LOG NO.	LABORATORY REMARKS:									
			YES												



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

14/11/2011 10:11 AM

卷之三

PROJECT REFERENCE <i>Souget Area 1</i>		PROJECT NO. 23548	PROJECT LOCATION (STATE) <i>IL</i>	MATRIX TYPE	REQUIRED ANALYSES				PAGE 2 OF 2	
STL (LAB) PROJECT MANAGER <i>B. Bruchamp</i>	P.O. NUMBER <i>Dir. Et. Bill to Solutia</i>	CONTRACT NO.							STANDARD REPORT DELIVERY	
CLIENT (SITE) PM <i>Kimberly Parry</i>	CLIENT PHONE	CLIENT FAX							DATE DUE _____	
CLIENT NAME <i>Solutia Inc.</i>	CLIENT EMAIL								EXPEDITED REPORT DELIVERY (SURCHARGE)	
CLIENT ADDRESS <i>St. Louis, Mo.</i>									DATE DUE _____	
COMPANY CONTRACTING THIS WORK (if applicable):									NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
SAMPLE		SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED				REMARKS	
DATE	TIME				ICE	ICE	ICE	ICE		
1-31-10	1640	<i>Fossil-csc-57-0-26"</i>			X	1	1	1		
269A-70										
1-31-10	<i>-- TEMP BLANK</i>			X	-	-	-			
RELINQUISHED BY: (SIGNATURE) <i>J. Souget</i>		DATE	TIME	RELINQUISHED BY: (SIGNATURE) <i>J. Souget</i>	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	
RECEIVED BY: (SIGNATURE) <i>J. Souget</i>		DATE	TIME	RECEIVED BY: (SIGNATURE) <i>5187 0371 1919</i>	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	
LABORATORY USE ONLY										
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT YES	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:			

FedEx USA Airbill

Label
Number

8187 0379 1999

From Please print and press hard.

Date 1-31-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name

COLIN WELKENKAMP

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

Dept/Floor/Suite/Rm

City SAINT LOUIS State MO ZIP 63127

2 Your Internal Billing Reference 23548.050.007

First 20 characters will appear on invoice.

3 To Recipient's Name BETSY BEAUBEAUCHAMP

Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

To "HOLD" at FedEx location, print FedEx address

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept/Floor/Suite/Rm

City SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability

0126730793



Sender's City

4a Express Package Service

Packages up to 150 lbs.

FedEx Priority Overnight
New business morning

FedEx Standard Overnight
New business afternoon

FedEx First Overnight
Earliest next business morning delivery to select locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx Envelope/Letter Rate not available Minimum charge: One pound rate

4b Express Freight Service

Packages over 150 lbs.

FedEx 1Day Freight*
New business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

* Call for confirmation

5 Packaging

* Declared value limit \$500

FedEx Envelope/Letter* FedEx Pak*

Other Pkg
Includes FedEx Box, FedEx Tube, and customer Pkg

6 Special Handling

Includes FedEx Air and FedEx Ground

SATURDAY Delivery
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

SUNDAY Delivery
Available for FedEx Priority Overnight to select ZIP codes

HOLD Weekly
at FedEx Location Not available with FedEx Next Overnight

1

HOLD Saturday
at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes <small>As per attached Shipper's Declaration</small>	<input type="checkbox"/> Yes <small>Shipper's Declaration not required</small>	<input type="checkbox"/> Dry Ice <small>Dry Ice or UN 1015</small>	<input type="checkbox"/> Cargo Aircraft Only
--	--	---	---	--

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment Bill to:

For FedEx Account or Credit Card No below

Sender
Acct No in Section
I will be billed

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Exp Date

Total Packages

Total Weight

Total Declared Value

1 54 \$ 00

Our liability is limited to \$100 unless you declare a higher value. See back for details

Below is Signature Sign here. Never delivery without obtaining signature

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability

FEDERAL EXPRESS AIR MAIL SERVICE AGREEMENT TO THE AIRBILL

359



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

**Savannah
Laboratories**

EDUCATORS
a division of Seven Trust Publications, Inc.

PROJECT REFERENCE

PROJECT NO.

PROJECT LOCATION
(STATE) TX

MATR
TYP

102 LaRoche Avenue, Savannah, GA 31404
846 Industrial Plaza Drive, Tallahassee, FL 32304
50 Lakeside Drive, Mobile, AL 36693
22 Benjamin Rd., Suite 100, Tampa, FL 33634

Phone: (912) 354-7858 **Fax:** (912) 352-0165
Phone: (850) 878-3994 **Fax:** (850) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7048

PROJECT REFERENCE Saugel Area 1		PROJECT NO. 23548	PROJECT LOCATION (STATE) IL	MATRIX TYPE	REQUIRED ANALYSES				PAGE 1	OF 21				
STL (LAB) PROJECT MANAGER b. bouchard		P.O. NUMBER Print Bill to Solution	CONTRACT NO.						STANDARD REPORT DELIVERY					
CLIENT (SITE) PM Kimberly Perry		CLIENT PHONE	CLIENT FAX						DATE DUE _____					
CLIENT NAME Solutia Inc.		CLIENT EMAIL							EXPEDITED REPORT DELIVERY (SURCHARGE)					
CLIENT ADDRESS St. Louis Mo.										DATE DUE _____				
COMPANY CONTRACTING THIS WORK (if applicable):										NUMBER OF COOLERS SUBMITTED PER SHIPMENT:				
SAMPLE		SAMPLE IDENTIFICATION		COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMISOLID	AIR	NONAQUEOUS LIQUID (OIL, SOLVENT, ETC)	NUMBER OF CONTAINERS SUBMITTED				REMARKS	
DATE	TIME			X				Copper (Cu 721) Tin (Sn 7951)	ice	ice	ice	ice		
2-1-00	1845	Fasal-CSC-S8-0-16"		X				PCB (680) TPH-Gro (SU 1515) (SA 2544C6)						
	0915	Fasal-CSC-S9-0-27"		X				Tee (Zn 100)						
	0915	Fasal-CSC-S9-0-27" FD		X				TTHM-S-H2SiO3 (SU 8615B)						
	1005	Fasal-CSC-S-10-0-25"		X										
	1005	Fasal-CSC-S10-0-26" MS/MSD		X										
	1045	Fasal-CSC-S11-0-25"		X										
	1045	Fasal-CSC-S11-0-25" FD		X										
↓ → TEMP BLANK														
RELINQUISHED BY: (SIGNATURE) J. Hoad		DATE 2-8-99	TIME 1:20	RELINQUISHED BY: (SIGNATURE) J. Hoad		DATE 2-1-00	TIME 1:00	RELINQUISHED BY: (SIGNATURE)		DATE	TIME			
RECEIVED BY: (SIGNATURE) John Hoad		DATE 2-7-99	TIME 1200	RECEIVED BY: (SIGNATURE) Fedex: 8187 0379 1988		DATE 2-1-00	TIME 1:00	RECEIVED BY: (SIGNATURE)		DATE	TIME			
LABORATORY USE ONLY														
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT YES	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:							

FedEx. USA Airbill FedEx
Priority
Overnight 8187 0379 788

Sender's Copy

1 From Please print and press here.

Date 2-1-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name **Colin Nellenkamp**

Phone (314) 842-4550

Company **O'BRIEN & GERE**

Address **12250 WEBER HILL RD**

Dept./Floor/Suite/Room

City **SAINT LOUIS**

State **MO** Zip **63127**

2 Your Internal Billing Reference

Pre 10 characters will appear on bill.

23548.050.007

3 To

Recipient's Name

BETSY BEAUBEAUCHAMP

Phone (912) 334-7858

Company **SAVANNAH LABRATORIES**

Address **5102 LAROCHE AVE**

To "HOLD" at FedEx location, print FedEx address.

We cannot deliver to P.O. Boxes or P.O. ZIP codes

Dept./Floor/Suite/Room

City **SAVANNAH**

State **GA** Zip **31404**

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0126730793

4a Express Packages Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx 2Day®
Second business day

FedEx Express Saver®
Third business day

4b Express Freight Service

FedEx 1Day Freight®
Next business day

FedEx 2Day Freight
Second business day

* Call for Confirmation

5 Packaging

FedEx Envelope/Letter®

FedEx Pak®

Estimated value less than \$100

Estimated value \$100 or more

Not available with
FedEx First Overnight

Not available with
FedEx First Day

Not available with
FedEx 2Day

Not available with
FedEx 1Day

Not available with
FedEx Express Saver

Not available with
FedEx 2Day Freight

Not available with
FedEx 1Day Freight

Not available with
FedEx 2Day

Not available with
FedEx Express Saver

Not available with
FedEx 2Day Freight

Not available with
FedEx 1Day Freight

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FedEx 1Day Freight

Not available with
FedEx 2Day

Not available with
FedEx Express Saver

Not available with
FedEx 2Day Freight

Not available with
FedEx 1Day Freight

Not available with
FedEx 2Day

Not available with
FedEx Express Saver

Not available with
FedEx 2Day Freight

6 Special Handling

SATURDAY Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
Service only

SUNDAY Delivery
Delivery to FedEx Priority
Overnight or select FedEx
2Day service

HOLD Wednesday
Not available with
FedEx First Overnight

HOLD Thursday
Not available with
FedEx First Day

HOLD Friday
Not available with
FedEx First Overnight

HOLD Saturday
Not available with
FedEx First Day

Does this shipment contain dangerous goods?
One box must be checked.

Yes
As per declared
Shipper's Declaration
not required

No
Shipper's Declaration
not required

Dangerous Goods cannot be shipped in FedEx packaging

Dry Ice
Dry Ice & Live Fish

Cargo Aircraft Only

7 Payment Method

Enter FedEx Acct. No. or Credit Card No. below

Sender
Acct. No. to Section
Card will be filled

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct. No.
Credit Card No.

Box
No.

Total Packages

Total Weight

Total Declared Value

1

35

00

For delivery by Sunday to FedEx charges you declare a higher value. See back for details.

8 Release Signature Deliver to intended delivery without holding delayed.

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

359

FedEx Use Only

SWW 0100-Rev. Date 6/98 - Part #154012-01094-00 FedEx - PRINTED IN U.S.A.

FedEx. USA Airbill 818703 11977

Sender's City

1 From 2-1-00 Sender's FedEx
Date 1187-9587-3 Account Number

Sender's Name CHAD KRIETER

Phone # (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

City SAINT LOUIS State MO Zip 63127

Phone (912) 354-7858

2 Your Internal Billing Reference 23547.050.067

3 To RECIPIENT'S NAME

Recipient's Name BETSY BEAUBEAUCHAMP

Phone (912) 354-7858

4a Delivery Instructions

5 Packaging

6 Special Handling

7 Pickup/Bill Me

8 Release Signature

- Express Package Service Delivery Instructions: Priority Mail or FedEx Air
 FedEx Priority Overnight Delivery Instructions: FedEx Air
 FedEx Standard Overnight Delivery Instructions: FedEx Air
 FedEx First Overnight Delivery Instructions: FedEx Air

- FedEx 2Day Freight Delivery Instructions: FedEx Air
 FedEx 2Day Express Delivery Instructions: FedEx Air
 FedEx Express Server Delivery Instructions: FedEx Air
 FedEx 3Day Freight Delivery Instructions: FedEx Air

- FedEx Envelope/Letter* *Delivery Instructions: FedEx Air
 FedEx Pak* *Delivery Instructions: FedEx Air
 Other Pak *Delivery Instructions: FedEx Air

- Saturday Delivery Delivery Instructions: FedEx Air
 Sunday Delivery Delivery Instructions: FedEx Air
 Hold at Location Delivery Instructions: FedEx Air
 At FedEx Location Delivery Instructions: FedEx Air
 Hold for Delivery Delivery Instructions: FedEx Air

- Yes No Delivery Instructions: FedEx Air
 Air Freight Delivery Instructions: FedEx Air
 Return Instructions Delivery Instructions: FedEx Air
 Direct Line Delivery Instructions: FedEx Air
 Credit Card Delivery Instructions: FedEx Air
 Cargo Aircraft Only Delivery Instructions: FedEx Air

- Sender Recipient Delivery Instructions: FedEx Air
 Third Party Delivery Instructions: FedEx Air

- Total Weight Delivery Instructions: FedEx Air
 Total Dimensional Weight Delivery Instructions: FedEx Air
 FedEx One Day Delivery Instructions: FedEx Air

- Total Weight Delivery Instructions: FedEx Air
 Total Dimensional Weight Delivery Instructions: FedEx Air
 FedEx One Day Delivery Instructions: FedEx Air

- Total Weight Delivery Instructions: FedEx Air
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 FedEx One Day Delivery Instructions: FedEx Air

- Total Weight Delivery Instructions: FedEx Air
 Total Dimensional Weight Delivery Instructions: FedEx Air
 FedEx One Day Delivery Instructions: FedEx Air

- Total Weight Delivery Instructions: FedEx Air
 Total Dimensional Weight Delivery Instructions: FedEx Air
 FedEx One Day Delivery Instructions: FedEx Air

269A-84

PULL APART RETAIN THIS COPY BEFORE ATTACHING TO THE PACKAGE

[359]

By signing my signature or initials, I declare this document reflects my understanding of my shipping options and agree to indemnify and hold harmless FedEx from any resulting claims.

Please sign here: [Signature] Date: [Date] Initials: [Initials]

Questions? Call 1-800-Go-FedEx® (800-463-3339)
Visit our Web site at www.fedex.com
By using the shield you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability

0126730793



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone:** (912) 354-7858 **Fax:** (912) 352-0165
Phone: (904) 878-3994 **Fax:** (904) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049
Phone: (504) 764-1100 **Fax:** (504) 725-1163

PROJECT REFERENCE SAUvet Area 1		PROJECT NO. 23548		P.O. NUMBER DIREC P. 11 to Solut. A		MATRIX TYPE	REQUIRED ANALYSES					PAGE / OF /		
PROJECT LOC. (State)	SAMPLER(s) NAME Colin Wellenkamp	PHONE	FAX											
CLIENT NAME Solutia, Inc.		CLIENT PROJECT MANAGER Kimberly Perry												<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY
CLIENT ADDRESS (CITY, STATE, ZIP) St Louis, MO.												<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)		
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		AQUEOUS LIQUID	SOLID OR SEMI-SOLID	AIR	NONAQUEOUS LIQUID	ICP	ice	ice	ice	ice	Date Due:	REMARKS
2/2/00 0730		FASED-CSB-S6-0-20		X										
	0930	FASED-CSB-S7-0-18"		X										
	1010	FASED-CSB-SBE-0-22"		X										
	1045	FASED-CSB-S9W-0-9"		X										
	1440	FASED-CSB-S10-0-9"		X										
	1440	FASED-CSB-S10-0-9" FD		X										
	1515	FASED-CSD-S1W-0-24"		X										
	1625	FASED-CSF-S35S-0-21"		X										
	1045	FASED-CSB-S9W-0-9" MS		X										
		TEMP BLANK		X										
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)				DATE	TIME
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	TIME
LABORATORY USE ONLY														
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:							
<input type="checkbox"/> YES <input type="checkbox"/> NO														

FedEx USA Airbill

Ind. Number 8187 0379 1966

1 From Please print and press hard.

Date 2-2-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name COLIN WELLENKAMP

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

Dept. FAX/Email/Phone

City SAINT LOUIS

State MO ZIP 63127

Your Internal Billing Reference

First 34 characters will appear on invoice
23548-050.007

3 To

Recipient's Name

BETSY BEAUBEAUCHAMP

Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

To "FEDX" at FedEx Labratories pre Fedex address

We cannot deliver to P.O. Boxes or FPO/HO codes

Dept. FAX/Email/Phone

City SAVANNAH

State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill.
See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability



4a Express Package Services

Packages up to 150 lbs.

Delivery commitment may be later on Sunday or Monday

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
16-18 hours after arrival

FedEx First Overnight
Earliest next business morning
Delivery by 10 a.m. local time

4b Express Freight Services

Packages over 150 lbs.

Delivery commitment may be later on Sunday or Monday

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

*Call Customer

*Delivery available until \$50

5 Parcel Post

Other Pkg
Includes FedEx Home Delivery,
FedEx HomeShip, FedEx
Video, and FedEx SuperShip

6 Special Handling

Delivery commitment may be later on Sunday or Monday

SATURDAY Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

SUNDAY Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Weekly
at FedEx Location
Not available with
FedEx 2Day Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Does this shipment contain dangerous goods?

No
As per attached
Shipping Instructions
not required

Yes
Shipping Instructions
not required

Dry Ice
by 9:00 AM
 Cargo Aircraft Only

7 Payment/Bill To:

Delivery commitment may be later on Sunday or Monday

Sender
Acct. No.
FedEx Card No.

Recipient
Acct. No.
FedEx Card No.

Third Party
Acct. No.
FedEx Card No.

Credit Card
Acct. No.
Exp. Date

Cash/Check
Acct. No.

FedEx Acct. No.
Credit Card No.

Exp. Date

Total Packages

Total Weight

Total Declared Value*

1

41

\$ 00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Return Shipping Label
Send a return delivery within 10 business days



May you please sign to receive this shipment without obtaining a signature
prior to delivery and the recipient retains ownership of the package.

359

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 550 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
 Phone: (904) 878-3994 Fax: (904) 878-9504
 Phone: (334) 666-6633 Fax: (334) 666-6696
 Phone: (813) 885-7427 Fax: (813) 885-7049
 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Solid Waste 1</i>	PROJECT NO. 23548	PO. NUMBER <i>Unlabeled</i>	MATRIX TYPE	REQUIRED ANALYSES					PAGE 1 OF 1					
PROJECT LOC. (State) <i>- FL</i>	SAMPLER(s) NAME <i>Colin Weiland</i>	PHONE <i>(305) 261-1234</i>	FAX <i>(305) 261-1234</i>											
CLIENT NAME <i>Solidia Inc</i>	CLIENT PROJECT MANAGER <i>Kimberly Perry</i>						<i>100% HCl</i>							
CLIENT ADDRESS (CITY, STATE, ZIP) <i>ST. LOUIS, MO</i>						<i>Hg, Cd, Pb, Zn, Cu, Ni, Cr, As, Hg, Cd, Pb, Zn, Cu, Ni, Cr, As</i>								
SAMPLE	SL NO.	SAMPLE IDENTIFICATION			LIQUEFIED	LIQUID OR SOLID	AIR	SOLID/WATER	NUMBER OF CONTAINERS SUBMITTED					REMARKS
DATE	TIME				X	X	X	X	1	1	1	1	1	
12-03-00	1150	FASED-BPL-S1-0-10 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1150	FASED-BPL-S2-0-7 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1350	FASED-BPL-S3-0-8 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1415	FASED-BPL-S4-0-10 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1445	FASED-BPL-S5-0-9 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1510	FASED-BPL-S6-0-11 Jars			X	X	X	X	1	1	1	1	1	
12-03-00	1510	FASED-BPL-S6-0-11 IN-FD			X	X	X	X	1	1	1	1	1	
12-03-00	1540	FASED-BPL-S7-0-9			X	X	X	X	1	1	1	1	1	
12-03-00	1550	FASED-BPL-S8-0-7			X	X	X	X	1	1	1	1	1	
12-03-00	1550	FASED-BPL-S8-0-9 - 115/mci			X	X	X	X	1	1	1	1	1	
12-03-00	---	Temp Blanks			X	X	X	X						
RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY (SIGNATURE)			DATE	TIME
<i>Colin Weiland</i>			12/17/00	11:30	<i>Colin Weiland</i>			12/17/00	11:30	<i>Colin Weiland</i>			12/17/00	11:30
RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY (SIGNATURE)			DATE	TIME
<i>Kimberly Perry</i>			12/17/00	1000	<i>Kimberly Perry</i>			12/17/00	1000	<i>Kimberly Perry</i>			12/17/00	1000
LABORATORY USE ONLY														
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:						
					<input type="checkbox"/> YES	<input type="checkbox"/> NO								

FedEx USA Airbill

8187 0379 1955

1 From Please print and press hard
 Date **12-3-00** Sender's FedEx Account Number **1187-9587-3**

Sender's Name **COLIN WELLENKAMP** Phone **(314) 842-4550**

Company **O'BRIEN & GERE**

Address **12250 WEBER HILL RD**
Dept 11 or Sales Room

City **SAINT LOUIS** State **MO** ZIP **63127**

2 Your Internal Billing Reference
First 4 characters will appear on invoice
23548.050.006

3 To
 Recipient's Name **BETSY BEAUBEAUCHAMP** Phone **(912) 354-7858**

Company **SAVANNAH LABRATORIES**

Address **5102 LAROCHE AVE**
To "MAIL" at P.O. box number, print FedEx address

City **SAVANNAH** State **GA** ZIP **31404**

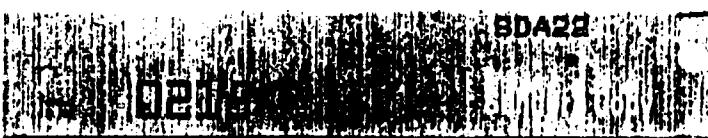
NEW Peel and Stick FedEx USA AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and our current Service Guide, including terms that limit our liability.



4a Express Package Service			Packages up to 150 lbs.	
<input checked="" type="checkbox"/> FedEx Priority Overnight <small>New business morning</small>			<input type="checkbox"/> FedEx Standard Overnight <small>New business afternoon</small>	<input type="checkbox"/> FedEx First Overnight <small>Earliest next business morning delivery to selected locations</small>
<input type="checkbox"/> FedEx 2Day* <small>Second business day</small>			<input type="checkbox"/> FedEx Express Saver* <small>Third business day</small>	* FedEx Express Saver Note not available Minimum charge One pound rate
4b Commercial Freight				
Packages over 150 lbs.				
<input type="checkbox"/> FedEx 1Day Freight* <small>New business day</small>			<input type="checkbox"/> FedEx 2Day Freight <small>Second business day</small>	<input type="checkbox"/> FedEx 3Day Freight <small>Third business day</small>
<small>* Call for Underweight</small>				
5 Packaging				
<input type="checkbox"/> FedEx Envelope/Letter* 			<input type="checkbox"/> FedEx Pak*	<input checked="" type="checkbox"/> Other Pak <small>Includes FedEx Blue Pak® Note, and return pkg</small>
6 Special Handling				
<input type="checkbox"/> SATURDAY Delivery <small>Available for FedEx Priority, Overnight and FedEx 2Day to select ZIP codes</small>		<input type="checkbox"/> SUNDAY Delivery <small>Available for FedEx Priority, Overnight to select ZIP codes</small>		<input type="checkbox"/> HOLD Weekday at FedEx Location <small>Not available with FedEx 1Day (Overnight)</small>
				<input type="checkbox"/> HOLD Saturday at FedEx Location <small>Available for FedEx Priority, Overnight and FedEx 2Day to select ZIP codes</small>
<small>Does this shipment contain dangerous goods?</small>				
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <small>As you attached Shipper's Dangerous Goods Label</small>				
<input type="checkbox"/> Dry Ice <small>(Up to \$1000 value)</small>				
<input type="checkbox"/> Cargo Aircraft Only				
7 Payment and Billing				
<input checked="" type="checkbox"/> Shipper <input type="checkbox"/> Recipient <input type="checkbox"/> Third Party <input type="checkbox"/> Credit Card <input type="checkbox"/> Cash/Clock				
<small>Print Name, Title, Company, Address, City, State, Zip, Telephone Number, Fax Number, E-mail Address, and Signature</small>				
<small>FedEx Acct No. Credit Card No.</small>				
<small>Zip Phone</small>				

Total Packages	Total Weight	Total Declared Value*
1	41	\$ 00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Hold and Return Subject to other delivery and return requirements

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify FedEx from claims resulting therefrom.

1359



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5102 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Rd., Suite 100, Tampa, FL 33634

Phone: (912) 354-7858 **Fax:** (912) 352-0165
Phone: (850) 878-3994 **Fax:** (850) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6698
Phone: (813) 885-7427 **Fax:** (813) 885-7049

FedEx USA Airbill Flight
Tracking
Number 8187 0379 1944

1 From *Amherst Prod. and Process Inc.*
n-a 2-3-00 Sender's FedEx
Account Number 1187-9587-3
to: *COLIN WELLENKAMP* Phone (314) 842-4550
party *O'BRIEN & GERE*
ress *12250 WEBER HILL RD*
SAINT LOUIS State MO ZIP 63127
Our Internal Billing Reference 23548.050.006
(No phone number will appear on invoices)

3 To
Recipient's
Name: **BETSY BEAUBEAUCHAMP** Phone: **(912) 334-7858**

SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

To "HOLD" at FedEx location, give FedEx address

SAVANNAH State **GA** ZIP **31404**

NEW Peel and Stick FedEx USA Airbill

See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

**By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.**

4a Express Package Services		Packages up to 150 lbs	
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business day arrival		FedEx Standard Overnight Next business day arrival	
		FedEx Fast Overnight Early next business morning Delivery by 10 a.m. in most areas	
<input type="checkbox"/> FedEx 2Day* Second business day		<input type="checkbox"/> FedEx Express Saver* Third business day	
		<small>* FedEx Express Saver Rate not available Minimum charge One pound rate</small>	
4b Express Freight Services		Packages over 150 lbs	
<input type="checkbox"/> FedEx 1Day Freight* Next business day		FedEx 2Day Freight Second and business day	
		FedEx 3Day Freight Third business day	
<small>* Call for Confirmation</small>			
5 Mail Shipping			
<input type="checkbox"/> FedEx Envelope/Letter*		<input type="checkbox"/> FedEx Pak*	
		<small>* Declared value limit \$500 FedEx Pak includes FedEx Pak Flat Rate, and Customer Pak</small>	
6 Special Handling			
<input type="checkbox"/> SATURDAY Delivery <small>Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes</small>		<input type="checkbox"/> SUNDAY Delivery <small>Available for FedEx Priority Overnight to select ZIP codes</small>	
		<input type="checkbox"/> HOLD Wednesday at FedEx Location <small>Not available with FedEx Fast Overnight</small>	
		<input type="checkbox"/> HOLD Saturday at FedEx Location <small>Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes</small>	
<small>For FedEx Pak refer to section 5</small>			
Does this shipment contain dangerous goods?			
<input checked="" type="checkbox"/> No		<input type="checkbox"/> Yes <small>As per attached Shipping Declaration</small>	
		<small>Shipper's Declaration not required</small>	
<small>Dangerous Goods cannot be shipped in FedEx Pak shipping</small>			
7 Payment Bill To:			
<input checked="" type="checkbox"/> Sender <small>Accts No. So. Name I will be billed</small>		<input type="checkbox"/> Recipient	
		<input type="checkbox"/> Third Party	
		<input type="checkbox"/> Credit Card	
		<input type="checkbox"/> Cash/Check	
<small>For FedEx Pak refer to section 5</small>			
8 Payment Method			
<input type="checkbox"/> Bank Acct No. <small>Check Card No.</small>		<input type="checkbox"/> For Use	
Total Packages 		Total Weight 	
		Total Declared Value* <small>\$ 00</small>	
<small>*Our liability is limited to \$100 unless you declare a higher value. See back for details.</small>			

By signing you authorize us to deliver this shipment without utilizing a signature
to acknowledge and hold up hazards from any resulting damage.

0126730793

USA Airbill

FAX
Tracking
Number

8170 9423 1624

Please print and press here

Date 02-04-02

Sender's FedEx
Account Number

1187-9587-3

Phone 314, 842-4550

Sender's Name Bill Wright

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS

State MO

ZIP 63128

Dept/Floor/Suite/Room

23548.030

Recipient's Name FRANK STEVENS

Phone 919, 544-5729

Company TRIANGLE LABORTIES

Address 801 CAPITOLA DR

We cannot deliver to PO boxes or P.O. ZIP codes

Dept/Floor/Suite/Room

HOLD at FedEx location.

press FedEx address here

DURHAM

State NC

ZIP 27713

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Questions? Call 1-800-Go-FedEx® (800-463-3339)

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and in our current Service Guide, including terms that limit our liability

0119392504

269A-92

Relinquished By/Signature & Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
Bill Wright 02-04-02 1900 8170-9423-1624				

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitola Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Direct

(1) Provide and/or correct client and project information

(3) Enter the sample ID to be used when reporting the sam

(4) Please list below the concentration used for each sample

Form U.S. No. 0215

4a

 FedEx Priority Overnight

Next business morning

Packages up to 150 lbs.
Delivery commitment may be later in some areas

Delivery commitment may be later in some areas

FedEx Standard Overnight

Next business afternoon

FedEx First Overnight

Earliest next business morning

Delivery to select locations

 FedEx 2Day*

Second business day

FedEx Letter Rate not available

Minimum charge One pound rate

 FedEx Express Saver*

Third business day

FedEx 3Day Freight

Third business day

*Call for Confirmation

Delivery commitment may be later in some areas

4b

 FedEx 1Day Freight*

Next business day

FedEx 2Day Freight

Second business day

FedEx 3Day Freight

Third business day

5

 FedEx Letter*

* Declared value limit \$500

 FedEx Pak*

X Other Pkg

Includes FedEx Box FedEx

Tube and customer pkg

6

 Saturday Delivery

Available for FedEx Priority

Overnight FedEx 2Day

to select ZIP codes

Sunday Delivery

Available for FedEx Priority

Overnight to select ZIP codes

HOLD Weekday at FedEx Location

Not available with

FedEx First Overnight

HOLD Saturday at FedEx Location

Available for FedEx Priority

Overnight and FedEx 2Day

to select locations

Does this shipment contain dangerous goods?

X No

 Yes

As per attached

Shipper's Declaration

 Yes

Shipper's Declaration

not required

Dry Ice

Dry Ice, L LN2 (40)

Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

Bill to:

X Sender

Acct No in Section 1 will be billed

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No

Credit Card No

Exp Date

Total Packages

Total Weight

Total Declared Value

52

\$ 00

Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Hold/Release

TP Sign to authorize delivery without obtaining a signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims

SAP 1190 - Rev. Dab 11/98 - Part #1548135 - © 1998 FedEx - PRINTED IN U.S.A.

359

ote 04998/9900001069

Total Number of
Containers:

13

Turn Around Time
(In Calendar Days):

Remarks

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT REFERENCE

**Savannah
Laboratories**

A division of Severe-Trent Laboratories, Inc.

5102 LaRoche Avenue, Savannah, GA 31404
2846 Industrial Plaza Drive, Tallahassee, FL 3230
900 Lakeside Drive, Mobile, AL 36693
6712 Benjamin Rd., Suite 100, Tampa, FL 33634

Phone: (912) 354-7858 **Fax:** (912) 352-0165
Phone: (850) 878-3994 **Fax:** (850) 878-9504
Phone: (334) 666-6633 **Fax:** (334) 666-6696
Phone: (813) 885-7427 **Fax:** (813) 885-7049

PROJECT REFERENCE JANET APRIL 1		PROJECT NO. 13504	PROJECT LOCATION (STATE) TJ	MATRIX TYPE	REQUIRED ANALYSES						PAGE 1 OF 1						
STL (LAB) PROJECT MANAGER L. D. CHAMP	P.O. NUMBER 13504-14	CONTRACT NO.									STANDARD REPORT DELIVERY CQ						
CLIENT (SITE) PM K. K. KRISTEN	CLIENT PHONE	CLIENT FAX									DATE DUE						
CLIENT NAME COLLEGEVILLE INC.	CLIENT EMAIL										EXPEDITED REPORT DELIVERY (SURCHARGE)						
CLIENT ADDRESS ST. LOUIS, MO											DATE DUE O						
COMPANY CONTRACTING THIS WORK (if applicable):										NUMBER OF COOLERS SUBMITTED PER SHIPMENT:							
SAMPLE DATE	SAMPLE TIME	SAMPLE IDENTIFICATION		COMPOSITE (C) OR GRAB (G) INDICATE	AQUEOUS (WATER)	SOLID OR SEMI-SOLID	AIR	INORGANIC LIQUID (OIL, SOLVENT, ETC)	NUMBER OF CONTAINERS SUBMITTED						REMARKS		
2-4-70	1317	B55E10-100C-US-E13		X					1	1	1	2	2	2	2	1	<i>corrected by Det 07 Feb 2000</i>
269A-93																	
<i>2-4-300 - T.M.1) BLANK X</i>																	
RELINQUISHED BY: (SIGNATURE) <i>J. Swafford</i>	DATE 2/8/99	TIME 8:20	RELINQUISHED BY: (SIGNATURE) <i>J. Swafford</i>	DATE 2/9/00	TIME 1900	RELINQUISHED BY: (SIGNATURE)				DATE	TIME						
RECEIVED BY: (SIGNATURE) <i>J. Swafford</i>	DATE 2/8/99	TIME 1200	RECEIVED BY: (SIGNATURE) EX: 81870379 A33	DATE 2/9/00	TIME 1900	RECEIVED BY: (SIGNATURE)				DATE	TIME						
LABORATORY USE ONLY																	
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:											



FedEx
Tracing
Number 8187 0379 1933

*COP Please print and print here
Date 2-4-00 Sender's FedEx
Account Number 1187-9587-3

Sender's Name COLIN WELLENKAMP Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

City SAINT LOUIS State MO ZIP 63127

our Internal Billing Reference 23546.060.003
First 24 characters will appear on invoices

Recipient's Name BETSY BEAUBEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

To "HOLD" at FedEx location, prior FedEx address.
We cannot deliver to P.O. boxes or P.O. ZIP codes.

City SAVANNAH State GA ZIP 31404

THIS AIRBILL IS FOR AIR MAIL USE ONLY

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0126730793

0215

4a **Priority Overnight**

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

Packages up to 150 lbs
Delivery commitment may be later in some areas.
 FedEx First Overnight
Express next business morning
Delivery to select locations

4b **2Day***

FedEx 2Day*
Second business day

FedEx Express Saver*

* FedEx Business Letter Rate for packages
Minimum charge U.S. domestic

4c **3Day***

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

Packages over 150 lbs
Delivery commitment may be later in some areas.
 FedEx 3Day Freight
Third business day

* Call for Confirmation:

5 **5Day***

FedEx Envelope/Letter*

FedEx Pak*

* Declared value limit \$50
 Other Pkg.
Includes FedEx Box, FedEx
Tube, and customer pkg.

6 **SATURDAY**

SATURDAY Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

SUNDAY Delivery
Available for FedEx Priority
Overnight or select ZIP codes

HOLD Weekend
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Pre-
Overnight and FedEx 2L
to select locations

Does this shipment contain dangerous goods?

No Yes
As per attached
Shipper's Declaration
not required

Yes
Shipper's Declaration
not required

Dry Ice
Dry Ice, 1. UN 1400

Cargo Aircraft On

7 **Sign for delivery**

Sender
Acc. No. in Section
I will be held

Recipient

Third Party

Credit Card

Cash/Chec

FedEx Acc. No.
Credit Card No

Ex Date

Total Packages Total Weight Total Declared Value

1 43 \$ 00

FedEx Use Only

* Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 **Sign for delivery without signature**

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

359

SRW 8403-Rev Date 6/95 Part #154813-C1984-00 FedEx PRINTED IN U.S.A.

SL VANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

LaRoche Avenue, Savannah, GA 31404

Phone: (912) 354-7858

Fax: (52-0165)

2846 Industrial Plaza Drive, Tallahassee, FL 32301

Phone: (904) 878-3994

Fax: (904) 878-9504

900 Lakeside Drive, Mobile, AL 36693

Phone: (334) 666-6633

Fax: (334) 666-6696

6712 Benjamin Road, Suite 100, Tampa, FL 33634

Phone: (813) 885-7427

Fax: (813) 885-7049

100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (504) 764-1100

Fax: (504) 725-1163

PROJECT REFERENCE String 1, nice 1		PROJECT NO. 23548	PO NUMBER S.16.1a	MATRIX TYPE AQUEOUS(WATER) SOLID OR SEMI-SOLID NONAQUEOUS(LIQUID, OIL, SOLVENT, ETC.) AIR	REQUIREMENTS										PAGE / OF	
PROJECT LOC. (State) IL	SAMPLER(s) NAME William F Wright	PHONE FAX	CLIENT NAME Solvent Inc.	CLIENT PROJECT MANAGER K Terry											<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY	
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, 1110												<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)				
SAMPLE	SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED										REMARKS	
DATE 12-04-00	TIME 1130	SW-PDC-DS		X	3	1	1	1	1	1	2	2	2	2		
12-04-00	1150	SW-PDC-DS-115		X	3											
12-04-00	1205	SW-PDC-DS-115D		X	3											
12-04-00	1215	SW-PDC-DS-		X	3											
12-04-00	1315	SW-PDC-115-FD		X	3											
12-04-00	1315	BSED-PDC-115-EB		X	3											
12-04-00	1600	Trip Blank		X	3											
269A-94A																
12-04-00		Temp Blank		X												
RELINQUISHED BY: (SIGNATURE) William F Wright		DATE 12/09	TIME 11:30	RELINQUISHED BY: (SIGNATURE) William F Wright	DATE 12/09/00	TIME 1912	RELINQUISHED BY: (SIGNATURE)		DATE	TIME						
RECEIVED BY: (SIGNATURE) William F Wright		DATE 12/09/00	TIME 1110	RECEIVED BY: (SIGNATURE) Box 8187-0379-1874	DATE 12-09-00	TIME 1900	RECEIVED BY: (SIGNATURE)		DATE	TIME						
LABORATORY USE ONLY																
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:									
				<input type="checkbox"/> YES	<input type="checkbox"/> NO											

USA Airbill Fols
Booking
Number 8187 0379 1874

2-04-00 **Sender's FedEx
Account Number:** **1187-9587-3**

Bill Wright Phone (314) 842-4550

12250 WEBER HILL RD

SINT LOUIS State **MO** ZIP **63127**

~~Serial Number Reference~~ 6 23548. 060.001

BETSY BEAUBEAUCHAMP Phone (912) 354-7858

SAVANNAH LABRARORIES

5102 LAROCHE AVE

ANNAH [REDACTED] 60-31404

NEW Zealand Stick-Fed Eggs

See back for application instructions.

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Visit our Web site at www.fedex.com

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269A-94B

0126730793

SDA22

9215

<input checked="" type="checkbox"/> FedEx Priority Overnight Next business day		<input type="checkbox"/> FedEx Standard Overnight Next business day	Packages up to 150 lbs. Delivery commitment more to cover in some areas	
<input type="checkbox"/> FedEx 2Day® Second business day		<input type="checkbox"/> FedEx Express Saver® Third business day	<input type="checkbox"/> FedEx First Overnight Late night and business morning overnight to select locations	
<input type="checkbox"/> FedEx 3Day Freight® Next business day		<input type="checkbox"/> FedEx 2Day Freight Second business day	Packages over 150 lbs. Delivery commitment more to cover in some areas	
* Call for Consignment				
<input type="checkbox"/> FedEx Envelope/Letter®		<input type="checkbox"/> FedEx Pak®	* Domestic rates used thru 2/28	
<input checked="" type="checkbox"/> SATURDAY Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes		<input type="checkbox"/> SUNDAY Delivery Available for FedEx Priority Overnight to select ZIP codes	<input checked="" type="checkbox"/> Other Pkg. Includes FedEx Box, FedEx Totes, and Customer Box	
Does this shipment contain dangerous goods?		Domestic priority air rates apply to all items		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes As our recipient Shipping Discrepancy		<input type="checkbox"/> Yes Shipping Discrepancy not required	<input type="checkbox"/> Dry Ice Dry Ice & UN 1845	<input type="checkbox"/> Cargo Aircraft Only
Dangerous Goods cannot be shipped in FedEx packages				
7 <input checked="" type="checkbox"/> Sender Acc. No. in Section Mail by Mail		<input type="checkbox"/> Hold Weekly at FedEx Location Non customers with FedEx First Overnight		
<input checked="" type="checkbox"/> Recipient		<input type="checkbox"/> Third Party	<input type="checkbox"/> Credit Card	<input type="checkbox"/> Cash/Check
FedEx Agent Ac/ Credit Card No.		FedEx Agent Ac/ Credit Card No.		
Total Packages	Total Weight	Total Declared Value?		
<u>1</u>	<u>78</u>	\$ <u>00</u>		
Our liability is limited to \$100 unless you declare a higher value. See back for details				
85¢ - 15¢/lb. to sign on authority authority insurance options				
By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims				
FedEx Use Only				
359				



ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD



8187 0379 1863

Sender's Copy

1 FAXED Please print and press hard

Date 2 - 7-00

Sender's FedEx
Account Number

1187-9587-3

Sender's Name *Nicholas E. Jenkins*

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

Dept/Name/Suite/Room

City SAINT LOUIS

State MO ZIP 63127

2 Your Internal Billing Reference

First 20 characters will appear on invoice **23548.050.003**

3 To

Recipient's Name

BETSY BEAUBEAUCHAMP

Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

To "HOLD" in FedEx location, print FedEx address

We cannot deliver to P.O. boxes or P.O. box codes

Dept/Name/Suite/Room

City SAVANNAH

State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

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0126730793

4a Express Package Service

 FedEx Priority Overnight
Next business day FedEx Standard Overnight
Second business afternoon FedEx First Overnight
Express next business morning
Delivery to select locationsPackages up to 750 lbs.
Delivery commitment may be later in some areas FedEx 2Day*
Second business day FedEx Express Saver*
Third business day* FedEx International air rates not available
Minimum charge: One pound rate

4b Express Freight Service

 FedEx 1Day Freight*
Next business day FedEx 2Day Freight
Second business day FedEx 3Day Freight
Third business day

* Call for Performance

* Declared value limit \$100

5 Particulars

 FedEx Envelope/Letter* FedEx Pak* Other Pak
Includes FedEx Box, FedEx tube, and customer ship

6 Special Handling

 SATURDAY DeliveryAvailable for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes SUNDAY DeliveryAvailable for FedEx Priority
Overnight to select ZIP codes HOLD Weekdayat FedEx Location
Not available with
FedEx First Overnight HOLD Saturdayat FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Does this shipment contain dangerous goods?

As per attached
Shipper's DeclarationYes
Shipper's Declaration
not required

Dry Ice

Dry Ice & UN 1995

Dangerous Goods cannot be shipped in FedEx packaging

Dry Ice

Dry Ice & UN 1995

Cargo Aircraft Only

7 Payment Bill to

Enter Name & Address of Credit Card Holder

 Sender
Acct No in Section
I will be billed Recipient Third Party Credit Card Cash/CheckFedEx Acct No
Credit Card NoExp
Date

Total Packages

Total Weight

Total Declared Value

33

\$ 00

FedEx Use Only

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature

Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

[359]

PULL AND RETAIN THIS COPY BEFORE AFFIXING TO THE PACKAGE.

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE *Nicholas E. Jenkins* Project/Quote 04998/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141

Contact: Ms. Kimberly Perry
Phone: 314-393-3721
Fax: 314-674-8957

Project (1): Saugat Area 1 Support Sampling

P.O.# (1): _____

(SOL05 /FMS)

Data to be reported to the state of MO.

Analysis Wanted (2):

**Total Number of
Containers:**

Turn Around Time (In Calendar Days):

269A-97

Relinquished By/Sign.

Date/Time
1530
2-7-00

Received By/Sign

ReInquished By/Sign.

Date/Time

Received By/Sign.

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

www.sample.com

Durham, NC 27713 U

(919) 544-5729 • Fax: (919)

Phone: (319) 344-5725 • Fax: (319) 344-5451

Directions:

- (1) Provide and/or correct client and project information.**
(2) Verify analysis, check appropriate boxes for each sample.

(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

FedEx USA Airbill Ref. No.: 8170 9423 1635

FROM Please print and press hard

Date

Sender's FedEx
Account Number

1187-9587-3

Sender's Name

Nicholas E Jenkins

Phone (314) 842-4550

Company

O'BRIEN & GERE

Address

5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS

State MO ZIP 63128

2 Your Internal Billing Reference

Rest 24 characters will appear on invoice

23548.050.003

3 To

Recipient's Name

FRANK STEVENS

Phone (919) 544-5729

Company

TRIANGLE LABORTIES

Address 801 CAPITOLA DR

We cannot deliver in P.O. Boxes or PM ZIP Codes

To MOLT of FedEx for you,
please FedEx address here

DURHAM

State NC ZIP 27713

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

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and in our current Service Guide, including terms that limit our liability.

0119392504



4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earlier next business morning
delivery to select locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx Lower Rate not available
Minimum charge One pound rate

4b Express Freight Service

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

* Call for information

5 Packaging

FedEx Letter*
Includes FedEx Box, FedEx Tube, and customer pkg

* Declared value limit \$100

Other Pkg.
Includes FedEx Box, FedEx Tube, and customer pkg

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight in select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No
At my request
Shipper's Declaration
not required

Yes
Shipper's Declaration
not required

Dry Ice
Dry Ice, & UN 1448

Cargo Aircraft Only

7 Payment Bill to:

Sender
Account in Section I
will be billed

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No

Credit Card No

Total Packages

Total Weight

Total Declared Value*

16

\$ 00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Release to carrier
Sign to indicate delivery address ok to receive packages

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

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Field Sampling Report, Saugat Area 1



Section 3.21

3.21. Surface Water Sampling

3.21.1. Rationale/Design

Surface water samples were collected to evaluate the extent of downstream migration of site-related constituents and to provide information for use in the HHRA (trespasser and recreational fishing scenarios) and the ecological risk assessment (endpoint organism exposure to surface water). The HHRA Work Plan is in Volume 1B of the SSP, and the Ecological Risk Assessment Work Plan is in Volume 1B. Surface water samples were co-located with broad-scan sediment samples (Old Prairie duPont Creek sediment samples and Dead Creek/ecological sediment samples as described in Section 3.20). A change order related to the collection of additional samples is presented in Section 3.21.4.1.

Surface water samples were collected at approximately upper, middle, and lower sections of each segment in Dead Creek to evaluate the extent of downstream migration of site-related constituents (Figure 10). However, sufficient water was not available to sample at three stations in Creek Segment C and two stations in Creek Segment E.

Two surface water samples were collected in Borrow Pit Lake upstream of the discharge of Dead Creek to assess the effect of backwater conditions and/or the contributions of other sources. One sample was collected upstream and one sample was collected downstream of the confluence of Dead Creek and Old Prairie duPont Creek to evaluate the impact of the Dead Creek discharge on surface water quality in Old Prairie duPont Creek.

The location of the upstream sample in Old Prairie duPont Creek was collected at an appropriate distance from the confluence with Dead Creek so that possible previous effects of flooding and flow reversals would not be likely to effect the collection of the background sample. As reported in the 1996 HRS package prepared by PRC Environmental Management, Inc. for USEPA Region V, a background sampling station was located 200 feet north (upstream) of the confluence of Dead Creek and Old Prairie duPont Creek. The surface water background sample was collected at this approximate location.

Two sampling stations in each of Reference Areas 1 and 2 were selected by Menzie-Cura because they were physically comparable to those in the Dead Creek watershed (in order to provide a basis for comparison with Dead Creek and Borrow Pit Lake) and because they were located away from the direct influence of industrial discharges, including major highways. The exact locations were identified after the Ecological Assessment Site Reconnaissance Survey was performed. Additionally, one sampling station was selected at Site M.

Samples were collected at an approximate depth of 60% of the creek water column (measured from the top of the water column).

Number of Surface Water Samples 20

Analyses:

Cyanide	USEPA Method 9010B
Dioxin	USEPA Method 8290
Fluoride	USEPA Method 300.0
Hardness	USEPA Method 130.1/130.2
Herbicides	USEPA Method 8151A
Mercury	USEPA Method 7470A
Metals	USEPA Method 6010B
Ortho-Phosphate	USEPA Method 365.2
PCBs	USEPA Method 680
Pesticides	USEPA Method 8081A
pH	USEPA Method 150.1/150.2
SVOCs	USEPA Method 8270C
TDS	USEPA Method 160.1
Total Phosphorus	USEPA Method 365.4
TSS	USEPA Method 160.2
VOCs	USEPA Method 8260B

Sampling locations were selected in the field with the concurrence of USEPA Region V or its designee.

3.21.2. QA/QC Samples

QA/QC samples consisted of the following:

- one duplicate per 10, or fraction of 10, environmental samples collected
- one MS/MSD per 20, or fraction of 20, environmental samples collected or one MS/MSD every three working days, whichever was sooner
- one equipment blank (or field blank) per 10, or fraction of 10, environmental samples collected unless dedicated or disposable sampling equipment was used to collect samples
- one trip blank per sample cooler containing environmental samples for VOC analysis that was shipped.

QA/QC samples were submitted for analysis and analyzed for the same parameters as the investigative samples, as applicable. Duplicate samples were collected to measure consistency of field sampling technique. MS/MSD samples were collected to measure laboratory QC procedures. Equipment blanks were collected to measure the

effectiveness of field decontamination procedures. Trip blanks were submitted to indicate cross-contamination of VOCs during shipment.

3.21.3. Field Procedures

Prior to performing field work, Preparatory Inspection Meetings attended by a representative of each of the interested parties were held (Section 3.21.4.2).

Sampling procedures for collecting surface water samples were developed using sample collection techniques, equipment, and materials described in the USEPA Region V document *Method 1669: Sampling Ambient Water for Trace Metals at EPA Water Quality Criteria Levels* (USEPA, 1996) as guidance. The degree of protection from sample contamination during collection, transport, and analysis provided in Method 1669 was developed assuming laboratory analytical method detection limits as low as tenths of a part per trillion. At the part per trillion method detection limit, outside contaminants must be eliminated. To this end, stringent and certifiable cleaning of all sampling equipment and materials, non-metallic sample collection materials and containers, and four sample collection techniques are included in Method 1669.

Analytical methodologies and method detection limits were developed to meet the objectives of this project and are described and listed in the QAPP. The project method detection limits for metals analyses are one to three orders of magnitude higher than those in Method 1669. For this reason, many of the requirements of Method 1669 are not applicable to this project. In general, the types of protective gloves, tubing, containers, sampling team members and their responsibilities, and specific sample collection techniques and equipment from Method 1669 were followed. For this sampling activity, low-density polyethylene (LDPE) tubing, nylon barbed hose connectors, styrene/ethylene/butylene/silicone (SEBS) flexible tubing, and laboratory-preserved sample containers were used.

Samples were collected from a flat-bottom boat or from the bank, depending on field conditions. Sampling equipment was placed into the boat or staged on the bank. Personal flotation devices were worn by the sampling team. Sampling was performed from downstream to upstream in locations where continuous water was present and flowing. The boat was positioned at the first sampling location and anchored in place with the bow facing upwind or upstream as appropriate.

Once at the sampling location, clean, non-talc gloves were put on by both team members. One team member attached the LDPE tubing to the PVC extension pole. Enough tubing was used so the inlet could be placed at approximately $0.6x$ foot of creek water column (where "x" is the total depth of the water column), measured from the top of the water column. Water depth was measured and sampling depth established prior to sampling. The SEBS flexible tubing was then connected to the peristaltic pump head. Sufficient LDPE tubing was then pulled from the roll and positioned so the discharge end extended 6 to 12 inches off the

stern of the boat or over the bank to discharge downstream of the inlet. The three sections of tubing were joined with barbed connectors, and the tubing inlet was positioned at the appropriate depth.

The low-flow peristaltic pump was turned on and allowed to pump for at least five minute to purge the collection tubing. While purging was continuing, sample labels were completed and affixed to the sample containers. A new pair of non-talc gloves was put on by both team members and sample collected, filling the VOC sample containers first. Metals samples were collected last.

As a sample container was filled and securely capped, it was placed on ice in a cooler. Once the sample containers were filled and placed in the cooler, the chain-of-custody form was completed. The tubing from the peristaltic pump and extension were disconnected and placed into a plastic trash bag for disposal. The anchor was then pulled, the boat was positioned to collect the next sample, and the sampling procedure was repeated. Sampling equipment decontamination was not performed since disposable equipment was used.

A "stilling well" made from a PVC well screen was installed at multiple test locations in an attempt to collect undisturbed surface water samples where sufficient water was not available for direct sampling. This technique was not effective and, therefore, was not implemented.

3.21.4. Documentation

The change order to increase the number of surface water samples is included in Section 3.21.4.1. Field logs generated are included in Record Book Nos. 1 and 2 (Appendix D). Figure 5 depicts surface water locations. Chain-of-custody forms are included in Section 3.21.4.3.

Documentation for this task continues on the next page.

3.21.4.1. Change Order

cc: York

PROJECT CHANGE ORDER

O'BRIEN & GERE ENGINEERS, INC.

PROJECT NAME: Solutia Saget Area 1 - Surface Water Sampling (Section 5.21 FSP)

PCO NUMBER	DESCRIPTION		
	Addition of three (3) Surface water samples to bring total from 20 to 23 to support ecological sampling.		
SUBMITTED TO	KJ Perry	COMPANY	Solutia
SUBMITTED BY	AJ Conk	COMPANY	O'Brien & Gere
INITIAL DATE	9/27/99	REQUIRED DATE	10/4/99
DAYS REQUESTED		AMOUNT REQUESTED	Cost covered in Add Sample Costs Already submitted to Solutia

CHANGE ORDER ITEMIZED DESCRIPTION

- Add three ~~one~~ surface water samples to Section 5.21 of the FSP to support the ecological Sampling. Per Add Cost from August 12, 1999 CO's \$910 sample. Total Change is \$2730.

IF ADDITIONAL SPACE IS REQUIRED,
RECORD ON REVERSE SIDE

Alan J Conk /RJD/ 9/27/99
PRINTED NAME / SIGNATURE OF PREPARER / DATE
Kimberly Perry /Kim/ 10/1/99
PRINTED NAME / SIGNATURE OF SOLUTIA REP / DATE

Field Sampling Report, Sauget Area 1

3.21.4.2. Preparatory Inspection Meeting Form

PREPARATORY INSPECTION MEETING

Conducted by/Company: Alan J. Cork/O'Brien & Gene Date: 10/4/99
 Project Name: Solutia Survey Area 1 Task: 5.21 Surface Water Sampling

1. Scheduled Work:

2. Equipment, Procedures, Personnel:

3. Ref. To App. Sec. of FSP/HASP:

4. Issues that could arise and how to resolve:

5. Solutia comments:

6. EPA comments:

- 1) Collect surface water samples @ predetermined sampling locations from Menzie-Cura Along Dead Creek Segment B thru F in the Borrow Pit Lake, In Reserve Area 1 & 2, and Site M. Start @ Station B, ^{Move to} Station B Creek Segments C & D as available.
 - 2) Boat, where necessary, peristaltic pump, teflon tubing, SEBS tubing, sample containers. Field Procedures outlined in Section 5.21.3 of FSP. Also, workers will be required to wear life vests.
 - 3) FSP Section 5.21 HASP Section 2.9. Since sediment will not be collected @ same time as Surface water no need to monitor w/ a PID, A-Gas Meter, or RAM.
 - 4) Not enough water in Creek to collect an undisturbed surface water sample. Workers will place a stilling well made from a well screen @ station and return @ a later date to sample.
 - 5) None
 - 6) None
- ATTENDANCE:**
- | EMPLOYEE NAME (print) | EMPLOYEE SIGNATURE | COMPANY |
|-----------------------|------------------------|---------|
| Alan J. Cork | <u>Alan J. Cork</u> | OBG |
| Melinda Wright | <u>Melinda Wright</u> | OBC |
| Sonja Judge | <u>Sonja Judge</u> | OSCO |
| Adam J. Kaisi | <u>Adam J. Kaisi</u> | OBG |
| DAREN THOMPSON | <u>Daren Thompson</u> | OBG |
| JOSEPH W. PERRY | <u>Joseph W. Perry</u> | OBG |
| Robert Perry | <u>Robert Perry</u> | Solutia |
| Charles Menzie | <u>Charles Menzie</u> | MCA - |

IF ADDITIONAL SPACE IS REQUIRED,
RECORD ON REVERSE SIDE

Alan J. Cork/Al PRINTED NAME/SIGNATURE OF PREPARE
10/4/99 DATE

Given to Weston 10/5/99 07:00 KAS

<u>Name</u>	<u>Signature</u>	<u>Company</u>
Katherine Fogarty	Katherine Fogarty	Menzie - Cura
Ken LAFFERTY	Keaff	MAVERICK
Ken Garret	Ken Garret	Menzie - Cura
Ben Amos	Bentine	Menzie - Cura
Doug Lavin	Doug Lavin	Menzie - Cura
Susanne Hoeppner	Susanne Hoeppner	Menzie - Cura
Marc Avakian	Marc	MCB
Eric Kenner	Eric	RF Weston

PREPARATORY INSPECTION MEETING

Conducted by/Company: DE Haverdink / O'Brien + Gere Date: 04 FEB 00
 Project Name: Solutia F. Saget Area 1 Task: Surf. water sample - Old Prairie du Lac

- | | |
|--|---------------------------------|
| 1. Scheduled Work: | <u>see below</u> |
| 2. Equipment, Procedures, Personnel: | " " |
| 3. Ref. To App. Sec. of FSP/HASP: | <u>FSP # 5.21 ; HASP # 2, 9</u> |
| 4. Issues that could arise and how to resolve: | <u>see below</u> |
| 5. Solutia comments: | " " |
| 6. EPA comments: | " " |

(1) Collect 2 surface water samples in Old Prairie du Lac Creek, one 200' upstream of Dead Creek and one 200' downstream of Dead Creek
 (2) Peristaltic pump, tubing, sample containers, filter - arrested; collect sample w/ tubing submerged at 60% ~~bottom~~ of water depth below top of water, purge w/ peristaltic pump for 5 min., collect sample into containers downstream

(3) see above
 (4) Issues: None

(5) ~~None~~ None

(6) none

ATTENDANCE:

EMPLOYEE NAME (print)	EMPLOYEE SIGNATURE	COMPANY
William E. Wright	William E. Wright	O'Brien + Gere
Craig KILLEEN/KRANTZ	Craig KILLEEN/KRANTZ	OBS
Robert J. Perry	Robert J. Perry	Solutia

CC: K. Perry 04 FEB 00
 E. Kepple C 1700

IF ADDITIONAL SPACE IS REQUIRED,
 RECORD ON REVERSE SIDE

DE Haverdink / DE Haverdink
 PRINTED NAME/SIGNATURE OF PREPARED
04 FEB 00
 DATE

Field Sampling Report, Saugat Area 1

3.21.4.3. *Chain-of-Custody Forms*

SL AVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858
 Phone: (904) 878-3994
 Phone: (334) 666-6633
 Phone: (334) 666-6696
 Fax: (813) 885-7427
 Fax: (813) 885-7049
 Phone: (504) 764-1100
 Fax: (504) 725-1163

PROJECT REFERENCE Savannah River		PROJECT NO. 23518	PO NUMBER BILL TO: CLUTIA	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1							
PROJECT LOC. (State) IL	SAMPLER(S) NAME WF WRIGHT/TA THOMAS		PHONE (311) 512-1550	FAX (311) 512-3266											<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY							
CLIENT NAME CLUTIA		CLIENT PROJECT MANAGER W. Wright, Ph.D., Sol. Inc.												<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)								
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, Mo												Date Due										
SAMPLE	SL NO.	SAMPLE IDENTIFICATION SWI-SB-S3		AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR MONAQUEOUS	LIQUID (oil, solvent, etc.) LIQUID (5-50g)	LIQUID (50-100g)	LIQUID (600g)	LIQUID (5-10L)	VOCs (100-1000g)	Metals (100-1000g)	Heavy Metals (100-1000g)	Trace Elements (100-1000g)	Total P-Hg	Flame AAS (100-1000g)	ICP-OES (100-1000g)	AFS (100-1000g)	ICP-MS (100-1000g)	Pyrolysis GC/MS (100-1000g)				
DATE 10/1/99	TIME 16:00				4	2	2	3-4	1-500	1-500	1-500	1-500	1-L	1-200ml								
REMARKS																						
279A-1																						
10/1/99 - TRIP BLANKS					3-400																	
RELINQUISHED BY: (SIGNATURE) Cheryl Strickland		DATE 10/1/99	TIME 1730	RELINQUISHED BY: (SIGNATURE) W. Wright		DATE 10/1/99	TIME 0400	RELINQUISHED BY: (SIGNATURE) W. Wright		DATE 10/1/99	TIME 1900											
RECEIVED BY: (SIGNATURE) WF Wright		DATE 10/1/99	TIME 1700	RECEIVED BY: (SIGNATURE) W. Wright		DATE 10/1/99	TIME 0800	RECEIVED BY: (SIGNATURE) FDX # 81551526 5861		DATE 10/1/99	TIME 1400											
LABORATORY USE ONLY																						
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:															
				<input type="checkbox"/> YES <input type="checkbox"/> NO																		

279A-2

FedEx USA Airbill

FedEx
Tracking
Number

8155 1526 5861

1 From: Please print and press hard
Date 10/4/99 Sender's FedEx Account Number **1187-9587-3**

Sender's Name **Alan Cork** Phone **(314) 842-4550**

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

Dept./Floor/Suite/Rm#

City **SAINT LOUIS** State **MO** ZIP **63128**

2 Your Internal Billing Reference
 And 20 characters will appear on invoice **23548.060.001**

3 To
 Recipient's Name **Betsy Beachamp** Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**

Address **5102 LA ROCHE AVE**

We cannot deliver to PO Boxes or P.O. Box codes

Dept./Floor/Suite/Rm#

City **SAVANNAH** State **GA** ZIP **31404**

See back for application instructions

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 and in our current Service Guide, including terms that limit our liability.

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SDA11

0215

4a Express Package Service

FedEx Priority Overnight FedEx Standard Overnight FedEx First Overnight
 Next business morning Next business afternoon Earliest next business morning delivery to select locations

FedEx 2Day* FedEx Express Saver*
 Second business day Third business day

Packages up to 150 lbs.
 Delivery commitment may be later in some areas
 * FedEx Express Saver not available
 Minimum charge One journal rate

4b Express Freight Service

FedEx 1Day Freight* FedEx 2Day Freight FedEx 3Day Freight
 Next business day Second business day Third business day

Packages over 150 lbs.
 Delivery commitment may be later in some areas

* Call for Confirmation

5 Packaging

FedEx Letter* FedEx Pak*

Other Pak
 Includes FedEx Box, FedEx Tube, and customer-pkg

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day in select ZIP codes
 Sunday Delivery Available for FedEx Priority Overnight in select ZIP codes
 HOLD Weekday At FedEx Location Not available with FedEx First Overnight

HOLD Saturday At FedEx Location Available for FedEx Priority Overnight and FedEx 1Day in select locations

Does this shipment contain dangerous goods?
 No Yes As per attached Shipper's Declaration
 Yes Shipper's Declaration required
 Dangerous Goods cannot be shipped in FedEx packaging

Dry Ice Dry Ice & UN 166
 Cargo Aircraft Only

7 Payment of Bill to:

Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct. No. Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value*
1	54	\$.00

* Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Hold on Signature: Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

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CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Co.Name: Solutia / O'Brien & Gove	Contact Name: Kimberly Peay - Solutia	Total No. of Containers	Analysis Wanted
Address: St. Louis, MO	Project Name: Solutia Saugat Areal		1. TCLP Dioxin METHOD 8280A
PO#: Direct Bill to Solutia			2. DIOXIN METHOD 8290
Phone #: 314 / 842 / 4550			

STA No.	Date	Time	Comp	Grab	Sample I.D.#	#of Cont.	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.	32.	33.	34.	35.	36.	37.	38.	39.	40.	41.	42.	43.	44.	45.	46.	47.	48.	49.	50.	51.	52.	53.	54.	55.	56.	57.	58.	59.	60.	61.	62.	63.	64.	65.	66.	67.	68.	69.	70.	71.	72.	73.	74.	75.	76.	77.	78.	79.	80.	81.	82.	83.	84.	85.	86.	87.	88.	89.	90.	91.	92.	93.	94.	95.	96.	97.	98.	99.	100.	101.	102.	103.	104.	105.	106.	107.	108.	109.	110.	111.	112.	113.	114.	115.	116.	117.	118.	119.	120.	121.	122.	123.	124.	125.	126.	127.	128.	129.	130.	131.	132.	133.	134.	135.	136.	137.	138.	139.	140.	141.	142.	143.	144.	145.	146.	147.	148.	149.	150.	151.	152.	153.	154.	155.	156.	157.	158.	159.	160.	161.	162.	163.	164.	165.	166.	167.	168.	169.	170.	171.	172.	173.	174.	175.	176.	177.	178.	179.	180.	181.	182.	183.	184.	185.	186.	187.	188.	189.	190.	191.	192.	193.	194.	195.	196.	197.	198.	199.	200.	201.	202.	203.	204.	205.	206.	207.	208.	209.	210.	211.	212.	213.	214.	215.	216.	217.	218.	219.	220.	221.	222.	223.	224.	225.	226.	227.	228.	229.	230.	231.	232.	233.	234.	235.	236.	237.	238.	239.	240.	241.	242.	243.	244.	245.	246.	247.	248.	249.	250.	251.	252.	253.	254.	255.	256.	257.	258.	259.	260.	261.	262.	263.	264.	265.	266.	267.	268.	269.	270.	271.	272.	273.	274.	275.	276.	277.	278.	279.	280.	281.	282.	283.	284.	285.	286.	287.	288.	289.	290.	291.	292.	293.	294.	295.	296.	297.	298.	299.	300.	301.	302.	303.	304.	305.	306.	307.	308.	309.	310.	311.	312.	313.	314.	315.	316.	317.	318.	319.	320.	321.	322.	323.	324.	325.	326.	327.	328.	329.	330.	331.	332.	333.	334.	335.	336.	337.	338.	339.	340.	341.	342.	343.	344.	345.	346.	347.	348.	349.	350.	351.	352.	353.	354.	355.	356.	357.	358.	359.	360.	361.	362.
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FedEx USA Airbill 8157 4791 9553

1 From *From* *Priority package*
 Date 10/4/99 Sender's FedEx
 Account Number 1187-9587-3

Sender's Name Tony Fennell Phone (314) 842-4550
 Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Floor/Suite/Rm.
 City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference *Internal Billing Reference*
 Are 24 characters will appear on invoice
 23518, Waite Bois
 3 To Recipient's Name Frank Stevens Phone

Company TRIANGLE LABORATORIES Dept./Floor/Suite/Rm.
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From
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4a Express Package Service **Packages up to 150 lbs.**
Delivery commitment may be later on some routes

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Earliest next business morning delivery to select locations

FedEx 2Day* Second business day FedEx Express Saver* Third business day * FedEx Later Days not available
 Minimum charge One pound per package

4b Express Freight Service **Packages over 150 lbs.**
Delivery commitment may be later on some routes

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

* Call for Confirmation Declared value limit \$100

5 Packaging Declared value limit \$100
 FedEx Letter* FedEx Pak* Other Pkg. Includes FedEx Box, FedEx Mail, and customer pkg.

6 Special Handling
 Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day in select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?
 No Yes As per attached
 Shipper's Declaration
 not required Yes Dangerous Declaration
 required Dry Ice Dry Ice, 8 LUM 1446 Cargo Aircraft Only

7 Payment Bill To: Indicate who is responsible for paying the bill
 Sender Accts. No. in Section 1
 and to bill Recipient Third Party Credit Card Cash/Check

Media Acct. No. Credit Card No. Exp. Date
 Total Packages **50** Total Weight **\$ 00** Total Declared Value **\$ 00**
Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims
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SL**SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

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- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858
- Phone: (904) 878-3994
- Phone: (954) 421-7400
- Phone: (334) 666-6633
- Phone: (813) 885-7427
- Phone: (504) 764-1100
- Fax: (912) 352-0165
- Fax: (904) 878-9504
- Fax: (954) 421-2584
- Fax: (334) 666-6696
- Fax: (813) 885-7049
- Fax: (504) 725-1163

PROJECT REFERENCE <i>Solut. Solut. Acl. 1</i>		PROJECT NO. 23518	PO. NUMBER Bill to Solut. c	MATRIX TYPE <i>PCB (G50)</i>	REQUIRED ANALYSES										PAGE OF		
PROJECT LOC. (State) IL	SAMPLER(s) NAME WE WRIGHT / PATHUMPSOON	PHONE (311) 642-1550	FAX (711) 612-3266		PCB (G50)	SOLVENT TESTS (8251A)	PCB (G50)	SOLVENT TESTS (8270C)	Cyanide (4010B)	Nitrate (2470A)	METALS (6010B)	Hazardous (6011B)	PCB (G50)	PCB (G50)	PCB (G50)	PCB (G50)	PCB (G50)
CLIENT NAME <i>Solut. Solut. Acl. 1</i>		CLIENT PROJECT MANAGER <i>Kimberly Penny - Solut. c</i>												<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY <input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)			
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St Louis, MO</i>														Date Due			
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR	NUMBER OF CONTAINERS SUBMITTED										REMARKS		
10/5/99	1000	SW-M-S1		X	4	2	2	1	1	1	1	1	1	1	1	1	1
279A-5																	
10/5/99 - TEMP BLANK																	
RELINQUISHED BY: (SIGNATURE) <i>R. Wright</i>		DATE 10/5/99	TIME 11:00	RELINQUISHED BY: (SIGNATURE) <i>R. Wright</i>		DATE 10/5/99	TIME 0800	RELINQUISHED BY: (SIGNATURE) <i>John E. Wright</i>		DATE 10/5/99	TIME 2100						
RECEIVED BY: (SIGNATURE) <i>R. Wright</i>		DATE 10/5/99	TIME 11:00	RECEIVED BY: (SIGNATURE) <i>John E. Wright</i>		DATE 10/5/99	TIME 0800	RECEIVED BY: (SIGNATURE) <i>FEDX # 61551526596A</i>		DATE 10/5/99	TIME 2100						
LABORATORY USE ONLY																	
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:										
				<input type="checkbox"/> YES	<input type="checkbox"/> NO												



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

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- 12 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
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 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

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Phone: (334) 666-6633 **Fax:** (334) 666-6696
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Temp Blank was in Coulter but not noted 1/26/96

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
Willing Relinquish	10/15/99	2100						
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
FF-1 X # 815C1C26 5975	10/15/99	2100						

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS:

FedEx USA Airbill

Form No. 0215

1 Please print and type information
Date 11/5/99 Sender's FedEx
Account Number 1187-9587-3

Sender's
Name Alan Cook

Phone (314) 842-4550

Address 5000 CEDAR PLAZA PKWY. STE. 2111
City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference # 23510.00

3 Recipient's Name Roger Bechard

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE
We are doing business as LA ROCHE

City SAVANNAH State GA ZIP 31404

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 Hold my account until payment received

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 FedEx Priority Overnight
 FedEx 10 Day Freight
 FedEx Same Day

4b FedEx 2 Day Freight
 FedEx Express Saver
 FedEx Same Day

4c FedEx 3 Day Freight
 FedEx 2 Day Freight
 FedEx Same Day

4d FedEx 4 Day Freight
 FedEx 3 Day Freight
 FedEx Same Day

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Account Number

Date 1107-9507-3

1015/99

Recipient's

Name

City SAINT LOUIS

State MO

Zip 63128

Address 5000 CEDAR PLAZA PKWY STE 211

Phone (314) 842-4550

2 Your International Billing Reference#

23516.060.001

3 To Betty Beuchamp

Recipient's

Name

City SAVANNAH LABORATORIES

State GA

Zip 31404

Address 5102 LA ROCHE AVE

Phone (912) 354-7858

4 NEW FEDERAL AIR MAIL

5 NEW FEDERAL AIR MAIL

6 HOLD Saturday

7 10111 BWF

8 FedEx Signature

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SL SAVANNAH LABORATORIES
ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-9504
- 414 SW 12th Avenue, Deerfield Beach, FL 33442 Phone: (954) 421-7400 Fax: (954) 421-2584
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- 100 Alpha Drive, Suite 110, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Solutia Court Area 1</i>		PROJECT NO. <i>23518</i>	P.O. NUMBER <i>B.11 to Solutia</i>	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1				
PROJECT LOC. (State)	SAMPLER(s) NAME <i>WF WRIGHT/ATHUMPTION</i>	PHONE (311) 817-1550	FAX (311) 817-3266	AQUEOUS (WATER) SOLID OR SEMI-SOLID AIR NONAQUEOUS	LIQUID (oil, solvent, etc.) PRESSURE HF/FA CIVL	LOC (E10C) RT/21 (650)	COPPER (510B)	CHLORIDE (510B)	MERCURY (711A)	METALS (600B)	MINERALS (800B)	PCP (100, 112)	PCP (150, 175)	PCP (250, 350)	PCP (350, 550)	PCP (550, 750)	PCP (750, 950)	PCP (950, 1150)	PCP (1150, 1350)
CLIENT NAME <i>Solutia</i>	CLIENT PROJECT MANAGER <i>Kimberly Penny Solutia</i>															<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY			
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St. Louis Mo</i>																<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)			
SAMPLE	DATE	TIME	SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED										REMARKS			
10/5/04	1215			SW-CSB-S1		X	4	2	2	1	1	1	1	4	1	-			
279A-11																			
10/5/04				TEMP BLANK															
RELINQUISHED BY: (SIGNATURE)				DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME				
<i>RJW</i>				10/5/04	0000	<i>WF Wright</i>			10/5/04	0000	<i>WF Wright</i>			10/5/04	2100				
RECEIVED BY: (SIGNATURE)				DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME				
<i>RJW</i>				10/5/04	0000	<i>WF Wright</i>			10/5/04	0000	<i>WF Wright</i>			10/5/04	2100				
LABORATORY USE ONLY																			
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS													
			<input type="checkbox"/> YES <input type="checkbox"/> NO																

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858
- Fax: (912) 352-0165
- Phone: (904) 878-3994
- Fax: (904) 878-9504
- Phone: (954) 421-7400
- Fax: (954) 421-2584
- Phone: (334) 666-6633
- Fax: (334) 666-6696
- Phone: (813) 885-7427
- Fax: (813) 885-7049
- Phone: (504) 764-1100
- Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	BILL	MATRIX TYPE	REQUIRED ANALYSES										PAGE	OF		
Solutia Saint Aren		23518	DIRECTLY TO SOUTIA			VOCs (5260B)	PCBs (5081A)	VOCs (8270C)	CYANIDE (90103)	MERCURY (7440)	METALS (6008)	LIGANDS (6008)	TOTAL D405	FLUORIDE (200)	CHLORIDE (400)	PHOSPHATE (650)	TSF (4002) TSC (601)	(150.1/150.2)	
PROJECT LOC. (State)	SAMPLER(s) NAME			PHONE (311) 512-1550		ACQUEOUS (WATER)	SOLID OR SEMI-SOLID	AIR	COOL	COOL	COOL	COOL	COOL	COOL	COOL	COOL	Date Due		
WE WRIGHT/DATUM/PEON				FAX (311) 512-1550		MONOQUEOUS LIQUID (oil, solvent, etc.)	4-ERG (51574)	PCBs (680)	VOCs (8270C)	CYANIDE (90103)	MERCURY (7440)	METALS (6008)	LIGANDS (6008)	TOTAL D405	FLUORIDE (200)	CHLORIDE (400)	PHOSPHATE (650)	TSF (4002) TSC (601)	(150.1/150.2)
CLIENT NAME		CLIENT PROJECT MANAGER		Kimberly Perry Solutia															
CLIENT ADDRESS (CITY, STATE, ZIP)		ST Louis, MO																	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION																
DATE	TIME																		
10/5/99	1215		SW-CSB-S1		X	3 v. 1,													
10/5/99	1115		SW-CSB-S2		X	3 v. 1,	2	2	1	1	1	1	1	+ 1 -					
10/5/99	1000		SW-M-S1		X	3 v. 1,													
10/5/99	1000		SW-BPL-S2		X	3 v. 1,													
10/5/99	1730		SW-BPL-S1		X	3 v. 1,													
279-A-13																			
10/5/99	-		TEMP BLANK		X														
10/5/99	-		TRIP BLANK		X	3v. 1,													
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME						
<i>R. J. Sch</i>		10/5/99	0800	<i>William E. Wright</i>			10/5/99	0800	<i>William E. Wright</i>			10/5/99	0800						
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME						
<i>R. J. Sch</i>		9/26/99		<i>William E. Wright</i>			10/5/99	0800	<i>FED X # 9155 1526 5910</i>			10/5/99	2100						
LABORATORY USE ONLY																			
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:												
				<input type="checkbox"/> YES <input type="checkbox"/> NO															

FedEx USA Airbill

FedEx
Tracking
Number

8155 1526 5910

1 Please print and print hardDate 10/5/99Sender's FedEx
Account Number

1187-9587-3

Sender's
NameAlan CorkPhone (314) 842-4550Company O'BRIEN & GEREAddress 5000 CEDAR PLAZA PKWY STE 211

Dept/Room/Sub/Rm

City SAINT LOUISState MOZIP 631282 Your Internal Billing Reference
and 24 characters will appear on invoice23548.060.001

3 To:

Recipient's
NameBetsy BeauchampPhone (912) 354-7858Company SAVANNAH LABORATORIESAddress 5102 LA ROCHE AVE

Dept/Room/Sub/Rm

We'll hold it at FedEx locations.
Enter FedEx address here.City SAVANNAHState GAZIP 31404**NEW YORK CITY AIRPORT FEDERAL AIRPORT**

See back for application instructions.

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and in our current Service Guide, including terms that limit our liability

0111962862

SDA11

0215

4a Express - Package Service

Packages up to 150 lbs.

Delivery commitment may be later in some areas

 FedEx Priority Overnight
Next business morning FedEx Standard Overnight
Next business afternoon FedEx First Overnight
Earliest next business morning
Delivery to select locations FedEx 2Day*
Second business day FedEx Express Saver*
Third business day* FedEx Light Rate not available
Minimum charge, One-pound rate

4b Express - Freight Service

Packages over 150 lbs.

 FedEx 1Day Freight*
Next business day FedEx 2Day Freight
Second business day FedEx 3Day Freight
Third business day

* Call for Confirmation

* Delivered value limit \$500

5 Packaging

 FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx
Mail, and customer pack

6 Special Handling

 Saturday DeliveryAvailable for FedEx Priority
Overnight and FedEx 2Day
Delivery to select ZIP codes Sunday DeliveryAvailable for FedEx Priority
Overnight to select ZIP codes
Not available with
FedEx First Overnight HOLD Weekdayat FedEx Location
Not available with
FedEx First Overnight HOLD Saturdayat FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
Delivery to select ZIP codes

Does this shipment contain dangerous goods?

 No Yes...
As per attached
Shipper's Declaration
not required Yes
Shipper's Declaration
not required Dry IceDry Ice, 8 UN 1010 Cargo Aircraft Only

7 Payment & Bill To:

 Sender
Acc No in Section 1
will be billed Recipient Third Party Credit Card Cash/Check

FedEx Acc No

Exp Date

Total Packages

Total Weight

Total Declared Value

\$ 00

* Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Authority to Ship Without Signature

Sign to authorize delivery without attaching signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

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[359]

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CLIENT CHAIN OF CUSTODY		SAMPLER'S SIGNATURE William C. Wright Joseph W. Long		Project/Quote 04939/9900001069		
From (1): Solutia, Inc. 575 Maryville Center Drive St. Louis, MO 63141 Project (1): Sauget Area 1 Support Sampling (SOL05 /FMS)		Contact: Mr. Alan Cork Phone: 314-674-3402 Fax: 314-674-8957 P.O. # (1): Bill Directly TO Solutia		Analysis Wanted (2): Dioxin SW 8260		Total Number of Containers: 15
		Data to be reported to the state of MO.				Turn Around Time (In Calendar Days):
Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.		Remarks
SW-CSB-S1	10/5/99 1215	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water	2 Amber l	X	
SW-CSB-S2	10/5/99 1115	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-M-S1	10/5/99 1000	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-BPL-S2	10/5/99 1600	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SW-BPL-S1	10/5/99 1720	Cool, $\text{Na}_2\text{S}_2\text{O}_3$	Water		X	
SED-CSB-S1	10/5/99 1145	Cool	Sediment	1. Amber l	X	
SED-CSB-S2	10/5/99 1530	Cool	Sediment		X	
SED-CSB-S3	10/5/99 1030	Cool	Sediment		X	
SED-CSB-S1 FD	10/5/99 1145	Cool	Sediment		X	
SED- CSB -M-S1	10/5/99 1500	Cool	Sediment		X	
Relinquished By/Sign. Joseph W. Long	Date/Time 10/5/99 2100	Received By/Sign. FedX #615717919575	Relinquished By/Sign.	Date/Time	Received By/Sign.	
Received for Laboratory By/Signature	Date/Time	Send Samples to: Triangle Laboratories, Inc. Attn: Sample Custodian 801 Capitola Drive Durham, NC 27713 USA Phone: (919) 544-5729 • Fax: (919) 544-5491				

- Directions:
- (1) Provide and/or correct client and project information.
 - (2) Verify analysis, check appropriate boxes for each sample.
 - (3) Enter the sample ID to be used when reporting the samples.
 - (4) Please indicate the preservation used for each sample.

279A-17

FedEx USA Airbill

FedEx
Tracking
Number

8157 4791 9575

1 From Please print and print hard
 Date 10/5/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Co-K Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

Dept/Rm/Suite/Rm

2 Your Internal Billing Reference

First 24 characters will appear on invoice

23518.060.001

3 To
 Recipient's Name PB Frank Stevens Phone ()

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept/Rm/Suite/Rm

To "HOLD" at FedEx location,
print FedEx address here
 City DURHAM State NC ZIP 27713

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 and in our current Service Guide, including terms that limit our liability.

0111963289

0215

SDA21

4a Express Package Service Packages up to 150 lbs.

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Earlier next business morning delivery to select locations

FedEx 2Day* Second business day FedEx Express Saver* Third business day * FedEx Letter Rate not available Minimum charge One pound rate

4b Express Freight Service Packages over 150 lbs.

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

* Call for confirmation Delivery commitment may be later in some areas

5 Packaging * Declared value limit \$500

FedEx Letter* FedEx Pak* Other Pkg Included with FedEx, FedEx Home, and customer ship

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods? Do not check if checked

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice \$1.00/lb Cargo Aircraft Only Dangerous Goods cannot be shipped in FedEx packaging

7 Payment Bill to Enter FedEx Acct. No. or Credit Card No. below

Sender Acct. No. in Section 1 will be billed Recipient Third Party Credit Card Cash/Check

FedEx Acct No Credit Card No Exp Date

Total Packages 2 Total Weight Total Declared Value \$.00

* Our liability is limited to \$100 unless you declare a higher value. See back for details FedEx Use Only

8 Release Signature Sign or authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

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359

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**SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

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 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
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- Phone: (912) 354-7858 Fax: (912) 352-0165
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Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES								PAGE	OF		
Sulfur Coated Area		23518	S. 11 Div. H, Tsl.	aqueous/water	CHLORIDE (8/5/03)	LEAD (8/5/03)	AMMONIA (8/5/03)	CHLORINE (8/5/03)	MERCURY (7/10/03)	LEAD (6/10/03)	ARSENIC (7/11/03)	TOTAL DISSolved SOLIDS (7/11/03)	FLUORIDE (7/10/03)	CHLORIDE (7/10/03)	PHOSPHATE (7/10/03)	STANDARD REPORT DELIVERY
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE (311) 812-1550		solid or semisolid	IRON (soil, water)	LEAD (soil, water)	AMMONIA (soil, water)	CHLORINE (soil, water)	MERCURY (soil, water)	LEAD (soil, water)	ARSENIC (soil, water)	TOTAL DISSolved SOLIDS (soil, water)	FLUORIDE (soil, water)	CHLORIDE (soil, water)	PHOSPHATE (soil, water)	EXPEDITED REPORT DELIVERY (surcharge)
CLIENT NAME		CLIENT PROJECT MANAGER		air	4	2	2	1	1	1	1	1	1	1	Date Due:	
CLIENT ADDRESS (CITY, STATE, ZIP)		K. Beverly Penny Srl., St. Louis, MO		water	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	10/6/99	REMARKS	
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		AIR	DATE	TIME	NUMBER OF CONTAINERS SUBMITTED									
10/6/99	1030	SW-BPL-S3		X			4	2	2	1	1	1	1	1		
10/6/99	TEMP BLANK			X												
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME					
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME					
LABORATORY USE ONLY																
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS									
				<input type="checkbox"/> YES	<input type="checkbox"/> NO											

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

JJ J. J. LaRoche Avenue, Savannah, GA 31404

Phone: (912) 354-7858

Fax: (912) 352-0165

2846 Industrial Plaza Drive, Tallahassee, FL 32301

Phone: (904) 878-3994

Fax: (904) 878-9504

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900 Lakeside Drive, Mobile, AL 36693

Phone: (334) 666-6633

Fax: (334) 666-6696

6712 Benjamin Road, Suite 100, Tampa, FL 33634

Phone: (813) 885-7427

Fax: (813) 885-7049

100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (504) 764-1100

Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES										PAGE / OF			
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	(311) 612 - 1550	AQUEOUS (WATER)	<input checked="" type="checkbox"/> ACIDS (E2608)	<input checked="" type="checkbox"/> HERBS (S55A)	<input checked="" type="checkbox"/> TEST. (608IA)	<input checked="" type="checkbox"/> SVOCs (70C)	<input checked="" type="checkbox"/> CYANIDE (40B)	<input checked="" type="checkbox"/> MERCURY (7474)	<input checked="" type="checkbox"/> INFRARED (40B)	<input checked="" type="checkbox"/> TOTAL (40B)	<input checked="" type="checkbox"/> FLUORIDE (30D)	<input checked="" type="checkbox"/> CHLORIDES (30D)	<input checked="" type="checkbox"/> TSS (30D)			
	WE WELCH/PA THOMSON	FAX	(211) 812 - 3266	SOLID OR SEMI-SOLID	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool	<input checked="" type="checkbox"/> Cool			
CLIENT NAME	CLIENT PROJECT MANAGER														STANDARD REPORT DELIVERY			
CLIENT ADDRESS (CITY, STATE, ZIP)	K. Beverly Perry Solut., St. Louis, Mo														EXPEDITED REPORT DELIVERY (surcharge)			
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		AIR	NUMBER OF CONTAINERS SUBMITTED													REMARKS
DATE	TIME			SOLID	3 vials	4	2	2	1	1	1	1	1	1	1	1		
10/6/99	1410	SW-CSD-S1		X	3 vials													
10/6/99	1410	SW-CSD-S2		X	3 vials													
10/6/99	1610	SW-CSD-S3		X	3 vials													
10/6/99	1030	SW-BPL-S3		X	3 vials													
10/6/99	1430	SW-CSD-S1-FD		X	3 vials													
10/6/99	1540	SW-CSD-EB		X	3 vials													
279A-20																	CLIENTS FIELD COPY	
10/6/99	-	TRIP BLANK		X	3 vials													
10/1/99	-	TEMP BLANK		X														
RELINQUISHED BY (SIGNATURE)		DATE	TIME	RELINQUISHED BY (SIGNATURE)		DATE	TIME	RELINQUISHED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME			
<i>John D. Smith</i>		10/6/99	0800	<i>John D. Smith</i>		10/6/99	0600	<i>John D. Smith</i>		10/6/99	1900	<i>John D. Smith</i>		10/6/99	1900			
RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME			
<i>John D. Smith</i>		9/20/99	1000	<i>John D. Smith</i>		10/6/99	1800	<i>John D. Smith</i>		10/6/99	1900	<i>John D. Smith</i>		10/6/99	1900			
LABORATORY USE ONLY																		
RECEIVED FOR LABORATORY BY (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS											
				<input type="checkbox"/> YES <input type="checkbox"/> NO														

FedEx USA Airbill

FedEx
Tracking
Number

8155 1526 5997

SDAII

15
Rm.
B/R No.

0215

1 From Please print and provide

Date **10/6/99**

Sender's FedEx
Account Number

1187-9587-3

Sender's
Name

Alan Cork

Phone **314 842-4550**

Company **O'BRIEN & GERE**

Address **5000 CEDAR PLAZA PKWY STE 211**

Dept/Plan/Suite/Room

City **SAINT LOUIS**

State **MO**

ZIP **63128**

2 Your Internal Billing Reference

First 20 characters will appear on invoice

235AE 060.001

3 To

Recipient's
Name

Betsy Beachamp

Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**

Address **5102 LA ROCHE AVE**

Dept/Plan/Suite/Room

To HOLD at FedEx location,
print FedEx address here

City **SAVANNAH**

State **GA**

ZIP **31404**

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and in our current Service Guide, including terms that limit our liability.

0111962862

4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

Packages up to 150 lbs.
Delivery commitment may be later in some areas.
 FedEx First Overnight
Earlier next business morning
Delivery to select locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx Return Fees not available
Minimum charge. One-ground rate

4b Express Freight Service

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

Packages over 150 lbs.
Delivery commitment may be later in some areas.
 FedEx 3Day Freight
Third business day

* Call for Confirmation

5 Packaging

FedEx Letter*

FedEx Pak*

Other Pkg
Includes FedEx Box, FedEx
Tube, and Customer Pkg.

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No

Yes
As per attached
Shipper's Declaration
not required

Yes
Shipper's Declaration
not required

Dry Ice
Dry Ice, \$1.00/lb

Cargo Aircraft Only

7 Payment Bill to:

Sender
Send Accts Section I
will be billed

FedEx Accts No
Credit Card No.

Exp Date

Total Packages

Total Weight

Total Declared Value*

\$ **00**

FedEx Use Only

(*Our liability is limited to \$100 unless you declare a higher value. See back for details.)

8 Release of Liability Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

[359]

RETAIN THIS COPY FOR YOUR RECORDS



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE S-111, Circuit Area 1		PROJECT NO. Z3518	PO NUMBER B.II Enviro, Inc. Solutions	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF			
PROJECT LOC. (State) IL	SAMPLER(S) NAME WT IV 216111 / DAT THOMPSON	PHONE (311) 812-1550	FAX (311) 812-1266		ANALYSES													
CLIENT NAME Solutions		CLIENT PROJECT MANAGER Kimberly Terry - Solutions		AQUEOUS/WATER SOIL OR SEMISOLID AIR NONAQUEOUS LIQUID (oil, solvent, etc.)	ALKALINE (pH > 7)		ACIDIC (pH < 7)		CHLORIDE (Cl ⁻)		CYANIDE (CN ⁻)		METAL CHLORIDE (M ⁺ Cl ⁻)		METAL CYANIDE (M ⁺ CN ⁻)		TOTAL METALS (M ⁺)	
CLIENT ADDRESS (CITY, STATE, ZIP) St Louis, MO					1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	1 (100)	
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED										REMARKS				
10/6/98	1121	SW-CSD-S1-FD		X	4	2	2	1	1	1	1	1	1	1	1	1	1	
279A-22																		
10/6/98 - TEMP BLANKS																		
RELINQUISHED BY: (SIGNATURE) <i>Kimberly Terry</i>		DATE 10/6/98	TIME 1900	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME							
RECEIVED BY: (SIGNATURE) <i>Fe J X # 81551528 6011</i>		DATE 10/6/98	TIME 1900	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME							

NOGG — TEMP PLANKS

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
<i>William E. Knott</i>	10/6/99	900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
FeJ x # 855 1520 6011	10/6/99	900						

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS

SL**JAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 5002 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (954) 421-7400 Fax: (954) 421-2584
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7049
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Solids Sample April</i>		PROJECT NO. 73518	PO. NUMBER 12.111-1. Solids	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1
PROJECT LOC. (State) IL	SAMPLER(s) NAME WF WRIGHT/CA THOMPSON		PHONE (711) 812-1155 FAX (711) 812-2266											<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY	
CLIENT NAME <i>Kathy Perry Solids</i>		CLIENT PROJECT MANAGER												<input type="checkbox"/> EXPEDITED REPORT DELIVERY(surcharge)	
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St Louis Mo</i>													Date Due		
SAMPLE	SL NO.	SAMPLE IDENTIFICATION		AQUEOUS (WATER) SOLID OR SEMI-SOLID	Liquid (oil, solvent etc) GELS (GROUT)	PCPs (50021A)	Cools (5270C)	VAP. VIDE (F100B)	METAL (TOC103)	LEAD (F1003)	TOTAL (TOC103)	FLUORIDES (F1002)	CHLORIDES (F1002)	PHOSPHATES (F1002)	DIAZONIUM (F1002)
DATE	TIME														
10/6/99	1400	SW-CSD-S2		X		4	2	2	1	1	1	1	1	1	1
REMARKS															
279A-24															
10/6/99	TEMP BLANK														
RELINQUISHED BY: (SIGNATURE) <i>J. Campbell</i>		DATE 10/6/99	TIME	RELINQUISHED BY: (SIGNATURE) <i>R. D.</i>		DATE 10/6/99	TIME	RELINQUISHED BY: (SIGNATURE) <i>J. Campbell</i>		DATE 10/6/99	TIME				
RECEIVED BY: (SIGNATURE) <i>A. S. Bell</i>		DATE 10/6/99	TIME	RECEIVED BY: (SIGNATURE) <i>Michael Elkins</i>		DATE 10/6/99	TIME	RECEIVED BY: (SIGNATURE) <i>FedEx # 8155 1526 6033</i>		DATE 10/6/99	TIME				
LABORATORY USE ONLY															
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS								
				<input type="checkbox"/> YES	<input type="checkbox"/> NO										

FedEx USA Airbill Ref. No. 8155 1526 6033

1 Enter recipient's address
Date 10/6/99 Sender's FedEx
Account Number 1187-9587-3

Sender's Name Alan Cork Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Floor/Suite/Room

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Any 4 characters will appear on invoice 23548 060.001

3 To
Recipient's Name Betsy Branchaps Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE Dept./Floor/Suite/Room
We cannot deliver to P.O. Boxes or F.D.R.C. boxes

To HOLD at FedEx location
print FedEx address here
City SAVANNAH State GA ZIP 31404

WEBSITE www.fedex.com

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111962862

6DA11
0215

4a Express FedEx Services Packages up to 150 lbs.
 FedEx Priority Overnight Delivery commitment may be later in some areas
Next business morning

FedEx Standard Overnight

FedEx First Overnight
Earlier next business morning
Delivery to select locations

FedEx 2Day*
Second business day FedEx Express Saver*
Third business day * FedEx lighter Rate not available
Minimum charge One pound rate

4b Express Freight Service Packages over 150 lbs.
 FedEx 1Day Freight*
Next business day FedEx 2Day Freight
Second business day FedEx 3Day Freight
Third business day

* Call for Confirmation

5 Packaging * Declared value limit \$200
 FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx tube, and customer bag

6 Special Handling
 Saturday Delivery Available for FedEx Priority
Overnight and FedEx 2Day
In select ZIP codes Sunday Delivery Available for FedEx Priority
Overnight in select ZIP codes HOLD Weekday
at FedEx Location Not available with
FedEx First Overnight HOLD Saturday
at FedEx Location Available for FedEx Priority
Overnight and FedEx 2Day
in select locations

Does this shipment contain dangerous goods?
 No Yes As per attached
Shipper's Declaration Yes Shipper's Declaration
not required Dry Ice
Dry Ice & UN 1095 Cargo Aircraft Only
Dangerous Goods cannot be shipped in FedEx packaging

7 Payment Bill To Type, Print, or Use Inkjet and Ink Cartridges
 Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct. No.
Credit Card No. Ex Date

Total Packages	Total Weight	Total Declared Value*
1	4.6	\$.00

* Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Sign Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

FAX 899 - Rev. Date 11/00 - Part #1548125 - © 1994 FedEx - PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS

279A-25



JAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
 - 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 - 414 SW 12th Avenue, Deerfield Beach, FL 33442
 - 900 Lakeside Drive, Mobile, AL 36693
 - 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 - 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- | | |
|------------------------------|----------------------------|
| Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE Solu. In Secret Area		PROJECT NO. Z3516	P.O. NUMBER B-1114 Solutions	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1	
PROJECT LOC. (State)	SAMPLER(s) NAME WE WRIGHT/TATUM/EXN	PHONE (311) 812-1450	FAX (311) 812-3266		ANALYSES											
CLIENT NAME Solutions		CLIENT PROJECT MANAGER Kimberly Terry Solutions		ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	
CLIENT ADDRESS (CITY, STATE, ZIP) St Louis, MO		ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	ANALYSIS	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		AQUEOUS LIQUID (or SEMISOLID) OR SOLID MATERIAL OR AIR	NUMBER OF CONTAINERS SUBMITTED										REMARKS
DATE	TIME		SW-CSI-S3			4	2	2	1	1	1	1	1	1	1	
10/6/98	1610															
															279A-26	
															10/6/98 - TEMP BLANK X	

10/6/96 - . TEMP BLANK

RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME	RELINQUISHED BY (SIGNATURE)	DATE	TIME
J. Campbell	10/6/99	144	A. S.	10/6/99	0600	William E. Elliott	10/6/99	1900
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
J. Campbell	10/6/99	144	William E. Elliott	10/6/99	0802	Ted X # 8155 15266044	10/6/99	1900

LABORATORY USE ONLY						
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS
			<input type="checkbox"/> YES <input type="checkbox"/> NO			

FedEx USA Airbill

Tracking Number
0215

1 From 10/6/99 Sender's FedEx
Account Number 1187-9587-3
Date Alan Cook

Sender's Name

Phone (314) 842-4550

2 Your Int'l Billing Reference
23516.060.001

Recipient's Name

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102A ROCHE AVE

We cannot

3 To Bethy Beachamp Sender's Name

Phone (912) 354-7858

City SAINT LOUIS

State MO

Zip 63128

4 Your Int'l Billing Reference
23516.060.001

5 Package(s)

6 Spatial Handling

7 Payment Method

8 Hold Signature

9 Hold Signature

10 Hold Signature

11 Hold Signature

12 Hold Signature

13 Hold Signature

14 Hold Signature

15 Hold Signature

16 Hold Signature

17 Hold Signature

18 Hold Signature

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37 Hold Signature

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43 Hold Signature

44 Hold Signature

45 Hold Signature

RETAIN THIS COPY FOR YOUR RECORDS

4a FedEx Package Services

Packaging up to 150 lbs.

Delivery commitment may not be same day

FedEx First Overnight

Delivery next business morning

Delivery to other locations

Delivery commitment may not be same day

FedEx Standard Overnight

Delivery next business afternoon

FedEx Express Saver™

Delivery next business day

FedEx Freight Services

Delivery commitment may not be same day

FedEx 200™

Delivery commitment may not be same day

FedEx 10 Day Freight™

Delivery commitment may not be same day

*Call for Details

FedEx 2 Day Freight™

Delivery commitment may not be same day

FedEx 3 Day Freight™

Delivery commitment may not be same day

FedEx 4 Day Freight™

Delivery commitment may not be same day

FedEx 5 Day Freight™

Delivery commitment may not be same day

FedEx 6 Day Freight™

Delivery commitment may not be same day

FedEx 7 Day Freight™

Delivery commitment may not be same day

FedEx 8 Day Freight™

Delivery commitment may not be same day

FedEx 9 Day Freight™

Delivery commitment may not be same day

FedEx 10 Day Freight™

Delivery commitment may not be same day

FedEx 11 Day Freight™

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FedEx 12 Day Freight™

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FedEx 13 Day Freight™

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FedEx 14 Day Freight™

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FedEx 15 Day Freight™

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FedEx 24 Day Freight™

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FedEx 25 Day Freight™

Delivery commitment may not be same day

FedEx 26 Day Freight™

Delivery commitment may not be same day

4b FedEx Freight Services

Delivery commitment may not be same day

FedEx First Overnight

Delivery commitment may not be same day

FedEx Standard Overnight

Delivery commitment may not be same day

FedEx Express Saver™

Delivery commitment may not be same day

FedEx 200™

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FedEx Freight Services

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FedEx 69 Day Freight™

Delivery commitment may not be same day

FedEx 70 Day Freight™

Delivery commitment may not be same day

FedEx 71 Day Freight™

Delivery commitment may not be same day

FedEx USA Airbill FedEx Tracking Number: 8155 1526 6022

1 From Name, Firm and address
 Date 10/6/99 Sender's FedEx Account Number 1187-9587-3
 Sender's Name Alan Cark Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE. 211 Dept/Floor/Suite/Room
 City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
 First 24 characters will appear on invoice 23518.060.001
 3 To
 Recipient's Name Betsy Beauchamp Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE Dept/Floor/Suite/Room
 We cannot deliver to PO Boxes or PG ZIP codes

To "HOLD" at FedEx location,
 print FedEx address here

City SAVANNAH State GA ZIP 31404

ENTERPRISE Fund Block FEDERAL SAVANNAH

See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability

0111962862



4a Express Package Service

FedEx Priority Overnight
 Next business morning

FedEx Standard Overnight
 Next business afternoon

FedEx First Overnight
 Early next business morning
 Delivery to select locations

Packages up to 150 lbs.
Delivery commitment may be later in some areas.

* FedEx Letter Rate not available
 Minimum charge: One-pound rate

FedEx 2Day*
 Second business day

FedEx Express Saver*
 Third business day

* FedEx Letter Rate not available
 Minimum charge: One-pound rate

4b Expedited Freight Service

FedEx 1Day Freight*
 Next business day

FedEx 2Day Freight
 Second business day

FedEx 3Day Freight
 Third business day

Packages over 150 lbs.
Delivery commitment may be later in some areas.

* Call for Confirmation

5 Packaging

FedEx Letter*

FedEx Pak*

Other Pak.
Includes FedEx Box, FedEx Mail, and customer Pak

6 Special Handling

Saturday Delivery
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Sunday Delivery
Available for FedEx Priority Overnight to select ZIP codes

HOLD Weekday at FedEx Location
Not available with FedEx First Overnight

HOLD Saturday at FedEx Location
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Does this shipment contain dangerous goods?
(Indicate by checking)

No

Yes
As per attached Shipper's Declaration

Yes
Shipper's Declaration not required

Dry Ice
Dry Ice, UN 1845

Cargo Aircraft Only

7 Payment Bill to:

Sender
Acct. No. in Section I will be billed

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
 Credit Card No

Exp Date

Total Packages

Total Weight

Total Declared Value?

\$ 00
FedEx Use Only

8 Release Signature

Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims.

SPP 999 - Rev. Date 11/98 - Part #1548135 - © 1994 FedEx - PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS

CLIE..1 CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive

St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

Contact: Mr. Alan Cork

Phone: 314-674-3402

Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

(48 GRAMS) mixed			

Total Number of
Containers:

14

Turn Around Time
(In Calendar Days):

(SOL05 /FMS)

Data to be reported to the state of MO.

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.	Remarks
SLU-CSD-S3	10/6/99 1610	cool, Na ₂ S ₂ O ₃	water	2 liter	X
SLU-CSD-S2	10/6/99 1440	cool, Na ₂ S ₂ O ₃	water	2 liter	X
SLU-CSD-E.B	10/6/99 1540	cool, Na ₂ S ₂ O ₃	water	2 liter	X
SED-CSE-S2-0.2FT	10/6/99 0930	cool	sediment	1 liter	X
SED-CSE-S1-0.2FT	10/6/99 1045	cool	sediment	1 liter	X
SED-CSE-S3-0.2FT	10/6/99 1430	cool	sediment	1 liter	X
BPL-ESED-S1-0.2FT	10/6/99 1100	cool	sediment	1 liter	X
BPL-ESED-S1-FD-0.2FT	10/6/99 1100	cool	sediment	1 liter	X
BPL-ESED-S3-0.2FT	10/6/99 1630	cool	sediment	1 liter	X
SED-CSE-S3-0.2FT MS/MSD	10/6/99 1430	cool	sediment	2 liter	X

279A-30

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
		FedEx # 615747919597			

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitola Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
- (4) Please indicate the preservation used for each sample.

FedEx USA Airbill Ref. No.
Tracing Number 8157 4791 9597

1 From Please print and type here
 Date 10/6/99 Sender's FedEx
 Account Number 1187-9587-3

Sender's Name Alan Cork Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
First 24 characters will appear on invoice

235AB. ECO Sed Supply

3 To
 Recipient's Name Frank Stevens Phone 1

Company TRIANGLE LABORATORIES

Address B01 CAPITOLA DR

We cannot deliver to PO boxes or PO ZIP codes

Dept./Plan/Suite/Room

To HOLD at FedEx location,
 print FedEx address here
 City DURHAM State NC ZIP 27713

VIEW CURRENT AIRBILL RATES

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability

0111963289

0215

SDA2

4a Express Package Service

Packages up to 150 lbs.

FedEx Priority Overnight Next business morning

FedEx Standard Overnight Next business afternoon

FedEx First Overnight Earliest next business morning delivery to select locations

FedEx 2Day*
Second business day

FedEx Express Saver*
Third business day

* FedEx Lower Rate not available
 Minimum charge. One pound rate

4b Express Freight Service

Packages over 150 lbs.

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

Call for Confirmation

Delivery commitment may be later in some areas

5 Packaging

FedEx Letter* FedEx Pak*

Other Pkg.
Includes FedEx Box, FedEx tube, and customer ship

6 Special Handling

Saturday Delivery
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Sunday Delivery
Available for FedEx Priority Overnight in select ZIP codes

HOLD Weekday
at FedEx Location

HOLD Saturday
at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes

Does this shipment contain dangerous goods?

No Yes
As per attached
 Shipper's Declaration
 not required

Yes
Shipper's Declaration
 not required

Dry Ice
Only

Cargo Aircraft Only

7 Payment Bill to:

Sender
Acct. No. in Second Line to be shown

Recipient Third Party Credit Card Cash/Check

FedEx Acct. No.
 Credit Card No.

Total Packages Total Weight Total Declared Value

1 65 \$ 00

Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Release Signature

Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

See back - Rev. Date 11/98 - Part #1548135 - © 1994 FedEx - PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS

CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

CO.Name: Solutia Street Area

Contact Name: Kimberly Penny

Address: St. Louis, MO

Project Name: Solutia Smart App

PO#: Deep Bill to
Sputnik

Phone #: 314 / 842 / 4550

Total No. of
Containers

Analysis Wanted

I. DIOXIN
8280A

2. DIOXINS 8290

For exp# 8157 4/1/9623

Conquered by Island
Army

Date/Time
10/6/99 1700

Received By/Sign.
Fazek

Relinquished By/Sign.

Date/Time

Received By/Sign.

Rennguished By Sign.

Date/Time

Received By/Sign.

Relinquished By/Sign.

Date/Time

Received By/Sign.

Received for Laboratory By/Signature

Date/Time

Send Samples To: Triangle Laboratories of RTP, Inc.

801 Capitola Drive

Durham, North Carolina 27713

FedEx USA Airbill

8157 4791 9623

1 11000 Phone number and area code
 Date 10/16/99 Sender's FedEx
Account Number 1187-9587-3

Sender's Name Alan Cork Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept/Floor/Suite/Rm#

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Any 10 characters will appear on invoice 23548.020.005

3 To
 Recipient's Name Frank Stevens Phone

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR Dept/Floor/Suite/Rm#
We cannot deliver to P.O. boxes or P.O. ZIP codes

City DURHAM State NC ZIP 27713

NEW Peel and Stick FedEx USA AIRBILL™

See back for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability

0111963289

0215

BDA21

4a Express Package Service
 FedEx Priority Overnight New business morning FedEx Standard Overnight New business afternoon FedEx First Overnight Excludes most locations, requiring delivery to a select location

FedEx 2Day* Second business day FedEx Express Saver* Third business day * FedEx Letter Rate not available Minimum charge. One-pound rate

4b Express Freight Service
 FedEx 1Day Freight* New business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day Packages over 100 lbs.
Delivery commitment may be later in express areas

*Call for confirmation Declared value \$100-\$500
 5 Packaging
 FedEx Letter* FedEx Pak* Other Pak Includes FedEx Box, FedEx Tube, and customer box

6 Special Handling
 Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to selected ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to selected ZIP codes

Does this shipment contain dangerous goods?
 No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, UN 1995 Cargo Aircraft Only

7 Payment Bill to Enter FedEx Account # or Credit Card Number
 Sender Acc. # in Section 1 and be billed Recipient Third Party Credit Card Cash/Check

FedEx Acc # Credit Card # Log Date
 Total Packages Total Weight Total Declared Value*
 \$ 00 FedEx Use Only

*Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorizes delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

359

RETAIN THIS COPY FOR YOUR RECORDS

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047
- Phone: (912) 354-7858 Fax: (912) 352-0165
 Phone: (904) 878-3994 Fax: (904) 878-9504
 Phone: (954) 421-7400 Fax: (954) 421-2584
 Phone: (334) 666-6633 Fax: (334) 666-6696
 Phone: (813) 885-7427 Fax: (813) 885-7049
 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES										PAGE	OF								
Savannah Sweet Area 23518		B11 Directly To			(check all applicable)																			
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE (311) 812 1550	FAX (311) 812 3266		CHLORIDE (4010B)	CHLORINE (4010C)	MERCURY (7170A)	METALS (6010G)	TOTAL CHLORINE (32113)	CHLOROPHYLL (2000)	PH (6010)	ALKALINITY (2000)	AMMONIA (6010)	ALKALINE (2000)	CHLORIDE (4010B)	CHLORINE (4010C)	MERCURY (7170A)	METALS (6010G)	TOTAL CHLORINE (32113)	CHLOROPHYLL (2000)	PH (6010)	ALKALINITY (2000)	AMMONIA (6010)	ALKALINE (2000)
IL	WF WRIGHT / DAT THOMPSON				<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>											
CLIENT NAME		CLIENT PROJECT MANAGER													<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY									
CLIENT ADDRESS (CITY, STATE, ZIP)		Kirk Kelly - Project Manager													<input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge)									
SAMPLE		SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED										REMARKS								
DATE	TIME		SW - CSE - S3		X	4	2	2	1	-1	1	1	4	1	1	1	1	1	1	1	1	1	1	1
10/7/99	1135				X	4	2	2	1	-1	1	1	4	1	1	1	1	1	1	1	1	1	1	1

279A-34

RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
<i>Wright</i>	10/7/99	1900						
RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME	RECEIVED BY: (SIGNATURE)	DATE	TIME
<i>FedEx # 815515266077</i>	10/7/99	1900						

LABORATORY USE ONLY										
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS				
			<input type="checkbox"/> YES <input type="checkbox"/> NO							

FedEx USA Airbill

FedEx Tracking Number
8155 1526 6077

1 From Please print and print here
Date 10/7/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Cork Phone 314-842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept/Floor/Subfloor

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
(First 24 characters will appear on invoice) 23548.060001

3 To
Recipient's Name Betsy Beauchamp Phone 912-354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE Dept/Floor/Subfloor
We cannot deliver to PO Boxes or P.O. Box lines

To HOLD at FedEx location
print FedEx address here

City SAVANNAH State CA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111962862

SDA11

0215

4a Express Package Service

Packages up to 150 lbs.

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Lastest next business morning delivery to select locations

FedEx 2Day* Second business day FedEx Express Saver* Third business day

* FedEx Lesser Rate not available Minimum charge, One pound rate

4b Express Freight Service

Packages over 150 lbs.

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

* Call for Confirmation

* Declared value limit \$500

5 Packaging

FedEx Letter* FedEx Pak* Other Pkg Includes FedEx Box, FedEx Tube, and customizing

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight & FedEx 2Day to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight & FedEx 2Day to select ZIP codes HOLD Weekday at FedEx Location HOLD Saturday at FedEx Location
Not available with FedEx First Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

No Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Dry Ice, LUN 105 Cargo Aircraft Only

7 Payment/Billing

Sender Acc No in Section 1 and be listed Recipient Third Party Credit Card Cash/Check

FedEx Acc No
Credit Card No

Total Packages	Total Weight	Total Declared Value*
1	45	\$.00

* Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

SAP Inv - Rev Date 11/99 - Part #1548135 - © 1994 FedEx - Printed in U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS



JAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5132 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE S-111 S-111-Area 1		PROJECT NO. 235-18		P.O. NUMBER E.II Directly to C.I.		MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1
PROJECT LOC. (State) IL	SAMPLER(S) NAME WE. WRIGHT / LATHAM BON	PHONE (314) 512-1550	FAX (314) 512-3266	VOCs (52603)	HERB. (5151A)		PCPs (5081-7)	VOCs (5270C)	CYANIDE (41008)	MERCURY (26104)	METALS (6002)	AGENES (142110)	ICIAL (214-214)	FLUORIDE (3514)	PHOTOXUS (3522)	TSS (60-2)	TD50 (150-2)
CLIENT NAME S-111-Area 1		CLIENT PROJECT MANAGER L. Anthony Terry S-111		AQUEOUS/LIQUID (oil, solvent, etc.)	SOLID/WATER	AIR	NONAQUEOUS LIQUID (oil, solvent, etc.)	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	WATER	
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, MO																	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED										REMARKS	
DATE	TIME							cwt	cwt	cwt	cwt	cwt	cwt	cwt	cwt	cwt	
10/1/94	0920		SW-CSF-S1	X				4	2	2	1	1	1	1	1	+ 1	→
10/1/94	1015		SW-CSF-S2	X				3v.1s									
10/1/94	1235		SW-CSF-S3	X				3v.1s									
10/1/94	1435		SW-CSF-S3	X				3v.1s									
10/1/94	-		TEMP BLANK	X				3v.1s									
10/1/94	-		TEMP BLANK	X				3v.1s									
RELINQUISHED BY: (SIGNATURE) S. Campbell			DATE 10/1/94	TIME 0900	RELINQUISHED BY: (SIGNATURE) R. S. Lee			DATE 10/1/94	TIME 0900	RELINQUISHED BY: (SIGNATURE) William Elliott			DATE 10/1/94	TIME 1900			
RECEIVED BY: (SIGNATURE) D. D. Lee			DATE 9/29/94	TIME 11:45 AM	RECEIVED BY: (SIGNATURE) William Elliott			DATE 10/1/94	TIME 0800	RECEIVED BY: (SIGNATURE) Fed X # B155 1526 6066			DATE 10/1/94	TIME 1900			
LABORATORY USE ONLY																	
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS									
					<input type="checkbox"/> YES	<input type="checkbox"/> NO											

FedEx USA Airbill

Form No. 10-104
Rate & Service Number

From: Please print and give name

Date 10/7/99

Sender's FedEx Account Number

1187-9587-3

From:

Recipient's Name

Alisa Cack

To:

Recipient's Name

Betty Beauchamp

From:

Company/Organization

Q'BRIEN & GERE

To:

Address

5000 CEDAR PKWY STE 211

From:

City

SAINT LOUIS

To:

State

MO

From:

Zip

63128

To:

Phone

(314) 842-4550

From:

Phone

(912) 354-7898

From:

Phone

23516.060.001

From:

Phone

5102 LA ROCHE AVE

From:</p

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 1002 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
- Phone: (904) 878-3994 Fax: (904) 878-9504
- Phone: (954) 421-7400 Fax: (954) 421-2584
- Phone: (334) 666-6633 Fax: (334) 666-6696
- Phone: (813) 885-7427 Fax: (813) 885-7049
- Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES							PAGE <u>1</u> OF <u>1</u>							
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE	(314) 812-1550	AQUEOUS (WATER)	<input checked="" type="checkbox"/>	ACID (pH < 4)	<input checked="" type="checkbox"/>	ALKALINE (pH > 10)	<input checked="" type="checkbox"/>	CHLORIDE (Cl ⁻)	<input checked="" type="checkbox"/>	CHLORINE (Cl ₂)	<input checked="" type="checkbox"/>	LEAD (Pb)	<input checked="" type="checkbox"/>	PHOSPHATE (PO ₄ ³⁻)	<input checked="" type="checkbox"/>	URIDYLIC ACID (UA)	<input checked="" type="checkbox"/>
	WE WILHELM/MA Homan	FAX	(311) 512-3266	SOLID OR SEMI-SOLID	<input checked="" type="checkbox"/>	ALKALI (pH > 12)	<input checked="" type="checkbox"/>	ALKALOID (pH > 10)	<input checked="" type="checkbox"/>	CHLORIDE (Cl ⁻)	<input checked="" type="checkbox"/>	CHLORINE (Cl ₂)	<input checked="" type="checkbox"/>	LEAD (Pb)	<input checked="" type="checkbox"/>	PHOSPHATE (PO ₄ ³⁻)	<input checked="" type="checkbox"/>	URIDYLIC ACID (UA)	<input checked="" type="checkbox"/>
CLIENT NAME		CLIENT PROJECT MANAGER		AIR	<input checked="" type="checkbox"/>	ALKALI (pH > 12)	<input checked="" type="checkbox"/>	ALKALOID (pH > 10)	<input checked="" type="checkbox"/>	CHLORIDE (Cl ⁻)	<input checked="" type="checkbox"/>	CHLORINE (Cl ₂)	<input checked="" type="checkbox"/>	LEAD (Pb)	<input checked="" type="checkbox"/>	PHOSPHATE (PO ₄ ³⁻)	<input checked="" type="checkbox"/>	URIDYLIC ACID (UA)	<input checked="" type="checkbox"/>
CLIENT ADDRESS (CITY, STATE, ZIP)				LIQUID (SOLVENT, ETC.)	<input checked="" type="checkbox"/>	ALKALI (pH > 12)	<input checked="" type="checkbox"/>	ALKALOID (pH > 10)	<input checked="" type="checkbox"/>	CHLORIDE (Cl ⁻)	<input checked="" type="checkbox"/>	CHLORINE (Cl ₂)	<input checked="" type="checkbox"/>	LEAD (Pb)	<input checked="" type="checkbox"/>	PHOSPHATE (PO ₄ ³⁻)	<input checked="" type="checkbox"/>	URIDYLIC ACID (UA)	<input checked="" type="checkbox"/>
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED										REMARKS				
DATE	TIME				4	2	2	1	1	1	1	1	1	1	1	1	1	1	
10/1/99	1015	SW-CSF-S2		X															
																279A-38			
10/1/99		TEMP BLANK		X															
RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME				
<i>S. Campbell</i>		10/1/99	0800	<i>R. D. O.</i>		10/1/99	0800	<i>Hildegard E. Wright</i>		10/1/99	1400	<i>Hildegard E. Wright</i>		10/1/99	1400				
RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)		DATE	TIME				
<i>R. D. O.</i>		10/1/99	0800	<i>Hildegard E. Wright</i>		10/1/99	0800	<i>Tel x # 81551526 (088</i>		10/1/99	1400	<i>Tel x # 81551526 (088</i>		10/1/99	1400				
LABORATORY USE ONLY																			
RECEIVED FOR LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:												
				<input type="checkbox"/> YES	<input type="checkbox"/> NO														

279A-39

FedEx USA Airbill

FedEx
Tracking Number
Account Number

8155 1526 6088

1 FROM Please print and press hard

Date 10/7/99

Sender's FedEx
Account Number

1187-9587-3

Sender's Name Alma Cork

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept/Floor/Suite/Room

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
First 24 characters will appear on invoice3 To
Recipient's NameBetsy Beauchamp

Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE

Dept/Floor/Suite/Room

To "HOLD" at FedEx location,
print FedEx address here

City SAVANNAH

State GA

ZIP 31404

NEW Page 8thick FedEx USA AIRBILL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.comBy using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability

0111962862

SDA11

0215

Form
ID No.

3a Shipping & Handling Service

Packages up to 150 lbs.

 FedEx Priority Overnight
Next business morning FedEx Standard Overnight
Next business afternoon FedEx First Overnight
FedEx next business morning
delivery to select FedEx offices FedEx 2Day*

Second business day

 FedEx Express Saver*

Third business day

Delivery commitment may be later in some areas

* FedEx 1st Day Rate not available
Minimum charge One pound rate

4b Freight & Freight Service

Packages over 150 lbs.

 FedEx 1Day Freight*

Next business day

 FedEx 2Day Freight

Second business day

 FedEx 3Day Freight

Third business day

* Call for Confirmation

5 Packaging

* Declared value limit \$500

 FedEx Letter* FedEx Pak* Other Pkg
Includes FedEx Box, FedEx
Tube, and customer Pkg

6 Special Handling

 Saturday DeliveryAvailable for FedEx Priority
Overnight and FedEx 2Day
to select ZIP codes Sunday DeliveryAvailable for FedEx Priority
Overnight to select ZIP codes HOLD Weekdayat FedEx Location
Not available with
FedEx First Overnight HOLD Saturdayat FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

 No YesAs per attached
Shipper's Declaration

not required

 Yes

Shipper's Declaration

not required

 Dry Ice

Dry Ice, R, UN 1445

Inert Gas

 Cargo Aircraft Only

7 Payment Bill to:

For FedEx Airbill, see section 9
 Sender
Acct. No. in Section 1 Recipient Third Party Credit Card Cash/Check
will be billedFedEx Acct. No.
Credit Card No.Up
Date

Total Package

Total Weight

Total Declared Value

1

45

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SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 1414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> J.J. LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |

PROJECT REFERENCE S-11-Swet Acre 1		PROJECT NO. 23518	PO NUMBER B-11 Directly to Sub-14	MATRIX TYPE	REQUIRED ANALYSES								PAGE 1 OF		
PROJECT LOC (State) IL	SAMPLER(s) NAME WFwr, ht / DA THOMPSON	PHONE (311) 812-1-50	FAX (311) 812-3266		ANALYSES										
CLIENT NAME Col utility		CLIENT PROJECT MANAGER Kimberly Perry		LIQUID (oil, solvent)	TESTS (615A)	SUCK (520C)	CYANIDE (401UB)	MERCURY (224)	ARSENIC (601UB)	HAZARDOUS (B-11)	TOTAL VITR (205)	FLUORIDE (207DF)	CHLORIDE (180)	TD (305-2)	Date Due
CLIENT ADDRESS (CITY, STATE, ZIP) St Louis, MO				AQUEOUS LIQUID (WATER)	TESTS (5081A)	TEST (660)	TEST (520C)	TEST (660)	TEST (601UB)	TEST (601UB)	VITR (110)	TEST (205)	TEST (180)	TEST (305-2)	
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED								REMARKS		
DATE 10/7/99	TIME 1335		SW-CSF-S3		X	4	2	2	1	-1	1	1	4	-	
279A-40															
10/7/99	-	TEMP BLANK		X											
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RECEIVED BY: (SIGNATURE) Fed X # 8155 1521 3986		DATE	TIME	RECEIVED BY: (SIGNATURE) 10/7/99 900		DATE	TIME	RECEIVED BY: (SIGNATURE)				DATE	TIME		

CLIENTS FIELD COPY

FedEx USA Airbill 8155 1526 3108

From Phone number and group name Sender's Name
Date 10/1/99 Account Number
Name Alga Cork
Sender's Name
Name

CITY SAINT LOUIS State **MO** ZIP **63128**
23518.060.001
Your Internal Billing Reference
Perforated characters and spaces at bottom

Betsy Beauchamp Phone (912) 354-7838
3 To Recipient's Name _____

SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE
Via Second delivery to P.O. Boxes or via 2nd class
Dear Friends and Neighbors

10 JULY 1944
100% of field observations
met needs; additional info
not needed.

NEW PAPER AND STOCK FOR EXHIBITION

Feedback for application instructions

Questions? Call 1-800-Go-FedEx® (800-463-3391)

Visit our Web site at www.sbc.com
By using this Airtel you agree to the service conditions on the back of this Airtel
and in our Current Service Guide, including terms that limit our liability.

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<input checked="" type="checkbox"/> FedEx Standard Overnight	<input type="checkbox"/> FedEx Priority Overnight
<input type="checkbox"/> FedEx First Overnight	<input type="checkbox"/> FedEx Same Day Delivery
Delivery confirmation Email or text message	
Package weight: up to 150 lbs. <small>or up to 100 lbs. with some exceptions</small>	

Mr. George Saville

Packages over 150 lbs.
Minimum charge, \$10.00
Please add 10% to some areas.
Please add 10% to some areas.
In California

FedEx 1 Day Freight®

FedEx 2 Day Freight®
Second business day

FedEx 3 Day Freight®
Third business day

- Call for Confirmation
- Decide on value and ECU

FedEx Pak® FedEx Letter®

Special Handling Return to Sender Hold Delivery Hold Weekday
 Hold Weekend Hold Information
at Feder Location

Am I a fan of Friends? **Am I a fan of Friends? Day** **Do I have 20 coins?**

DNRIC
 DNRIC by LBN 1000

Singapore's Destination
Singapore and Brunei cannot be displayed in FedEx packages.

Sender Recipient Third Party Credit Card

Total Declared Value: \$
Total Amount Due: \$

Read the following sentence. Then underline the subject.

Our liability is limited to \$100 unless you declare a higher value. See terms and conditions.

200-000-0000 Date 11/00-Per 015487-C 1000 00 Feb 1990 PENTAGON USA
and agree to indemnify and hold us harmless from all claims, demands, costs, expenses, losses, damages, and attorney's fees arising out of or resulting from any claim, demand, suit, action, proceeding, or cause of action, whether based upon contract, tort, statute, or otherwise, which may be brought against us by you or any other person or entity, or by any governmental agency, in connection with your use of the software.

RETAIN THIS COPY FOR YOUR RECORDS

279A-41

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE *DE Howard*

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

(SOL05 /FMS)

Contact: Mr. Alan Cork

Phone: 314-674-3402

Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

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SL SAVANNAH LABORATORIES
 & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Destrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
- Phone: (904) 878-3994 Fax: (904) 878-9504
- Phone: (954) 421-7400 Fax: (954) 421-2584
- Phone: (334) 666-6633 Fax: (334) 666-6696
- Phone: (813) 885-7427 Fax: (813) 885-7049
- Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE Solutions Super Area		PROJECT NO. 23518	P.O. NUMBER 8111	MATRIX TYPE 5 NTUs	REQUIRED ANALYSES										PAGE 1 OF 1					
PROJECT LOC. (State) IL	SAMPLER(S) NAME WE WRIGHT / DA THOMPSON	PHONE (314) 812-1550 FAX (314) 812-3766											<input checked="" type="checkbox"/> STANDARD REPORT DELIVERY							
CLIENT NAME Solutions		CLIENT PROJECT MANAGER Kimberly Perry Solutions											<input type="checkbox"/> EXPEDITED REPORT DELIVERY(surcharge)							
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, MO													Date Due							
SAMPLE		SL NO.	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED										REMARKS				
DATE	TIME					QUEOUS (WATER) AIR	SOLID OR SEMI-SOLID	Liquids (620B)	TESTS (800T)	Hg(85)	SVOCs (627DC)	PCPs (600)	Cyanide (6003)	MERCURY (470A)	METALS TESTS (1170.2)	HARDNESS (1170.2)	TOTAL PHOS (365.1)	TRADE DWs (345.2)	TRADE DWs (345.2)	TRADE DWs (345.2)
10/6/99			SW-RA1-S1			X		3 vials	4	2	2	-	1	1	1	1	4-1 →			
10/6/99			SW-RA1-S2			X		3 vials												
10/6/99			SW-RA2-S1			X		3 vials												
10/6/99			SW-RA2-S2			X		3 vials												
10/6/99			SW-RA1-S1-MS			X		3 vials												
10/6/99			SW-RA1-S1-MSD			X		3 vials												
10/6/99			SW-RA1-S2-MS			X		3 vials												
10/6/99			SW-RA1-S2-MSD			X		3 vials												
10/6/99			SW-RA1-S2-FD			X		3 vials												
10/6/99	-		TEMP BLANK			X														
10/6/99	-		TRIP BLANK			X		3 vials												
RELINQUISHED BY: (SIGNATURE) <i>Caron Shipp</i>			DATE 10/9/99	TIME 2000	RELINQUISHED BY (SIGNATURE)			DATE	TIME	RELINQUISHED BY (SIGNATURE)			DATE	TIME						
RECEIVED BY: (SIGNATURE) <i>FedEx # B155 1520 6160</i>			DATE 10/9/99	TIME 2000	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME						
SIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:												
					<input type="checkbox"/> YES <input type="checkbox"/> NO															

FedEx USA Airbill

1 FROM Please print and write here
 Date 10/8/98 Sender's FedEx
 Account Number 1187-9587-3

Sender's Name Alan Conk Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Please 24 characters will appear in FedEx 23518.060.001

3 To
 Recipient's Name Attn: Betsy Bentz Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE

We cannot deliver to P.O. boxes or P.O. Drop codes

© HOLD at FedEx location,
 and FedEx address here

City SAVANNAH State GA ZIP 31404

NEW! Peel and Stick FedEx USA Airbill!

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability

0111962862

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4a Express Package Service

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Within next business morning delivery to most locations

FedEx 2Day* Second business day FedEx Express Saver* Third business day * FedEx Express Saver not available Minimum charge: One-pound rate

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

* Call for Confirmation Packages over 150 lbs.
 Delivery commitment may be later in some areas

5 Packaging

FedEx Letter* FedEx Pak* * Declared value limit \$200
 Includes FedEx Box, FedEx
 Bag, and cushioning

6 Special Handling

Saturday Delivery Available for FedEx Priority
 Overnight and FedEx 2Day
 Overnight to select ZIP codes Sunday Delivery Available for FedEx Priority
 Overnight to select ZIP codes HOLD Weekday at FedEx Location
 Not available with
 FedEx First Overnight HOLD Saturday at FedEx Location
 Available for FedEx Priority
 Overnight and FedEx 2Day
 to select locations

Does this shipment contain dangerous goods?
 One box must be checked

No Yes As per attached
 Shipper's Declaration
 not required Yes Shipper's Declaration
 not required Dry Ice Dry Ice & UN 1065 Cargo Aircraft Only

Dangerous Goods cannot be shipped in FedEx packaging

7 Payment

Enter FedEx Acct. No. or Credit Card No. below

Sender Acct. No. in Section 1
 will be billed Recipient Third Party Credit Card Cash/Check

FedEx Acct No
 Credit Card No. Exp Date

Total Packages	Total Weight	Total Declared Value*
	<u>51</u>	\$ <u>.00</u>

* Our liability is limited to \$100 unless you declare a higher value. See back for details.

FedEx Use Only

8 Release Signature

Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims.

359

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS

YES NO



USA Airbill

FedEx
Tracking
Number

8155 1526 6239

1. Fill in the boxes and print here.

Date 10/8/99Sender's FedEx
Account Number

1187-9587-3

Sender's
NameAlan CorkPhone (314) 842-4550Company O'BRIEN & GEREAddress 5000 CEDAR PLAZA - PKWY - STE 211

Dept/Floor/Suite/Rm

City SAINT LOUISState MO ZIP 63128

2. Your Internal Billing Reference

First 24 characters will appear on invoice

23598.060001

3. To

Recipient's
NameBetsy BembyPhone (912) 354-7858Company SAVANNAH LABORATORIESAddress 5102 LA ROCHE AVE

Dept/Floor/Suite/Rm

To HOLD at FedEx location,
print FedEx address hereCity SAVANNAHState GA ZIP 31404**NEW Peel and Stick FedEx USA Airbill**

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.comBy using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability

0111962862

FEDEX 0215	Sender's Copy
-------------------	----------------------

4a Express Package Service

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earlier next business morning
Delivery to select locations

Packages up to 150 lbs.

Delivery commitment may be later in some areas

FedEx 2Day*
Second business day

FedEx Express Saver®
Third business day

* FedEx Letter Rate not available
Minimum charge. One-ground rate**4b Express Freight Service**

FedEx 1Day Freight®
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

Packages over 150 lbs.

Delivery commitment may be later in some areas

5 Packaging

FedEx Letter®

FedEx Pak®

Other Pkg
Includes FedEx Box, FedEx
Bags, and customer pkg

* Declared value limit \$100

6 Special Handling

Saturday Delivery
Available for FedEx Priority
Overnight and FedEx 2Day
Overnight to select ZIP codes

Sunday Delivery
Available for FedEx Priority
Overnight to select ZIP codes

HOLD Weekday
at FedEx Location
Not available with
FedEx First Overnight

HOLD Saturday
at FedEx Location
Available for FedEx Priority
Overnight and FedEx 2Day
to select locations

Does this shipment contain dangerous goods?

No

Yes
As per attached
Shipper's Declaration

Yes
Shipper's Declaration
not required

Dry Ice
Dry Ice & UN 1045

Cargo Aircraft Only

7 Payment

Sender
Acct No in Section 1

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct No
Credit Card No

Exp Date

Total Packages 45 Total Weight 8 Total Declared Value .00

Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx Use Only

8 Release Signature

Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

359

RETAIN THIS COPY FOR YOUR RECORDS



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS

FedEx USA Airbill

8155 1526 6228

1 From Please print and press hard
 Date 10/8/99 Sender's FedEx
 Account Number 1187-9587-3

Sender's Name Alan Clark Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Pre 24 characters will appear on invoice 23548.060.001

3 To
 Recipient's Name Betty Benchmarks Phone (912) 354-7859

Company SAVANNAH LABORATORIES

Address 5102 LA RAGHE AVE

We cannot deliver to P.O. Boxes or P.O. ZIP codes

City SAVANNAH State GA ZIP 31404

NEW Pad and Stick FedEx USA Airbill!

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability.

0111962862



Sender's Copy

4a Express Package Service

Packages up to 150 lbs.
Delivery commitment may be later in some areas

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earliest next business morning
 delivery to actual location*

FedEx 2Day*
Second business day

FedEx Express Saver®
Third business day

* FedEx Lesser Rate not available
Minimum charge: One-pound rate

4b Express Freight Service

Packages over 150 lbs.
Delivery commitment may be later in some areas

FedEx 1Day Freight®
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

5 Packaging

FedEx Letter®

FedEx Pak®

Other Pkg.
Includes FedEx Box, FedEx
 Can, and customer pkg.

6 Special Handling

Saturday Delivery

Sunday Delivery

HOLD Weekday

Available for FedEx Priority
 Overnight and FedEx 2Day
 delivery to select ZIP codes

Available for FedEx Priority
 Overnight to select ZIP codes

Available for FedEx Priority
 Overnight and FedEx 2Day
 to select locations

HOLD Saturday
at FedEx Location

HOLD Saturday
at FedEx Location

Available for FedEx Priority
 Overnight and FedEx 2Day
 to select locations

Available for FedEx Priority
 Overnight and FedEx 2Day
 to select locations

Available for FedEx Priority
 Overnight and FedEx 2Day
 to select locations

Does this shipment contain dangerous goods?

One leg, non-refundable checked

No Yes As per attached
Shipper's Declaration
 not required

Yes Shipper's Declaration
not required

Dry Ice
Dry Ice & UN 1845

Dangerous Goods cannot be shipped in FedEx packaging

Cargo Aircraft Only

7 Payment

Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct No
Credit Card No

Exp.
Date

Total Packages	Total Weight	Total Declared Value
<u>1</u>	<u>46</u>	\$ <u>00</u>

Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature

Sign to authorize delivery without presenting signature.

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims.

SPR 900 Rev. Date 11/98 Part #1548135 © 1994 FedEx - PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS



SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 5102 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

PROJECT REFERENCE Solutions, Soviet Area I		PROJECT NO. 23518	PO NUMBER B.11	MATRIX TYPE	REQUIRED ANALYSES										PAGE 1 OF 1
PROJECT LOC. (State) IL	SAMPLER(s) NAME NEWRIGHT/DATIUMSON	PHONE (311) 812-1550	FAX (311) 812-3266		TESTS										
CLIENT NAME Solutions		CLIENT PROJECT MANAGER Kimberly Perry-Solutions		AQUEOUS LIQUID (or solvent)	CHLORIDE (4008)	MERCURY (141202)	METALS (4005)	TOTAL PHOS (3854)	FLUORIDE (2012)	STANDARD REPORT DELIVERY					
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, Mo		AIR	NONAQUEOUS LIQUID (or semisolid)	H2SO4 (63%)	DICl5 (63%)	CHLORIDE (4008)	Hg (4008)	HRD (4005)	TOOTH HUE (1602)	<input type="checkbox"/>	EXPEDITED REPORT DELIVERY (surcharge)				
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED										REMARKS
DATE 10/8/99	TIME		SW-RA1-S2		X	4	2	2	1	1	1	1	-	→	
279A-50															
10/8/99		TEMP BLANK		X											
RELINQUISHED BY: (SIGNATURE)			DATE 10/8/99	TIME 5:30 PM	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME	
RECEIVED BY: (SIGNATURE) FedEx # B155 1526 6191			DATE 10/8/99	TIME 2000	RECEIVED BY: (SIGNATURE)			DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME	
LABORATORY USE ONLY															
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS							
					<input type="checkbox"/> YES	<input type="checkbox"/> NO									

FedEx USA Airbill

FedEx
Tracking
Number

8155 1526 6191

1 From Please print and press here
Date 10/6/99 Sender's FedEx
Account Number

1187-9587-3

Phone 314 842-4550

Sender's
Name Alan Cork

Company D' BRIEN & OERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Floor/Suite/Room
City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Pre 20 characters will appear on invoice

23548.060.001

3 To
Recipient's
Name

Betsy Burkhardt

Phone 912 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE
We cannot deliver to P.O. Boxes or F.O. Cons.

Dept./Floor/Suite/Room

Is YOUR FedEx location,
plus FedEx address here

CITY SAVANNAH

NEW Pod And Stick FedEx USA AIRBILL

See back for application instructions
Questions? Call 1-800-Go-FedEx® (800-463-3339)
Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability

0111962862

DP15		SDA11
Senders Copy		
<input checked="" type="checkbox"/> FedEx Express Package Service		
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning		
<input type="checkbox"/> FedEx Standard Overnight Next business afternoon		
<input type="checkbox"/> FedEx Express™ Next business day		
<input type="checkbox"/> FedEx 2Day™ Second business day		
<input type="checkbox"/> FedEx Express™ Next business day		
<input type="checkbox"/> FedEx 3Day Freight Third business day		
<input type="checkbox"/> FedEx 1Day Freight™ Next business day		
<input type="checkbox"/> FedEx 2Day Freight Second business day		
<input type="checkbox"/> FedEx 3Day Freight Third business day		
<input type="checkbox"/> FedEx Letter™		
<input type="checkbox"/> FedEx Pak™		
<input type="checkbox"/> Declared value less \$500		
<input checked="" type="checkbox"/> Declared value \$500 or more		
<input type="checkbox"/> FedEx Photo Includes FedEx box, FedEx label and customer photo		
<input type="checkbox"/> Hold Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations		
<input type="checkbox"/> Hold Weekday at FedEx Location Not available with FedEx First Overnight		
<input type="checkbox"/> Hold Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations		
<input type="checkbox"/> Dry Ice Dry Ice & UN 1045		
<input type="checkbox"/> Cargo Aircraft Only		
<input type="checkbox"/> Credit Card		
<input type="checkbox"/> Cash/Check		
<input checked="" type="checkbox"/> Payment Bill Me Enter FedEx First Mile Credit Card No. below Sender Acct. No. in Section I Recipient Third Party		
<input type="checkbox"/> Sender Acct. No. in Section I will be used		
<input type="checkbox"/> Recipient		
<input type="checkbox"/> Third Party		
<input type="checkbox"/> Credit Card		
<input type="checkbox"/> Cash/Check		
Total Packages	Total Weight	Total Declared Value
	248	\$ 00
<input type="checkbox"/> Our liability is limited to \$100 unless you declare a higher value. See back for details		
<input type="checkbox"/> Release Signature Sign to authorize delivery without obtaining a signature		

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims
SAF 100 - Rev Date 11/00 - Part #1548135 - © 1994 by FedEx - PRINTED IN U.S.A.

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AVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 102 LaRoche Avenue, Savannah, GA 31404
- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
- 414 SW 12th Avenue, Deerfield Beach, FL 33442
- 900 Lakeside Drive, Mobile, AL 36693
- 6712 Benjamin Road, Suite 100, Tampa, FL 33634
- 100 Alpha Drive, Suite 110, Desrehan, LA 70047

- Phone: (912) 354-7858 Fax: (912) 352-0165
- Phone: (904) 878-3994 Fax: (904) 878-9504
- Phone: (954) 421-7400 Fax: (954) 421-2584
- Phone: (334) 666-6633 Fax: (334) 666-6696
- Phone: (813) 885-7427 Fax: (813) 885-7049
- Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Solutions - Saugat Area 1</i>		PROJECT NO. <i>23548</i>	P.O. NUMBER <i>131110 Solutions</i>	MATRIX TYPE	REQUIRED ANALYSES							PAGE 1 OF 1					
PROJECT LOC. (State) <i>IL</i>	SAMPLER(s) NAME <i>WE Wright / DA Thompson</i>		PHONE <i>(314) 842-4550</i>	FAX <i>(314) 842-3266</i>	LIQUID (or solvent etc.) <i>P-573 (82.6%)</i>	AQUEOUS/WATER <i>HERBS (81.5%)</i>	SOLID OR SEMI-SOLID <i>ACB's (6.8%)</i>	GASEOUS/AIR <i>TURPS (82.70%)</i>	CYANIDE (100%) <i>Cyanide (100%)</i>	MERCURY (74001) <i>MERCURY (74001)</i>	METALS (6008) <i>METALS (6008)</i>	HARDNESS (12.110) <i>HARDNESS (12.110)</i>	TOTAL PHOS (365.5) <i>TOTAL PHOS (365.5)</i>	FLUORIDE (3200) <i>FLUORIDE (3200)</i>	PH (15.0-11.50-2) <i>PH (15.0-11.50-2)</i>	Date Due <i>10/15/99</i>	STANDARD REPORT DELIVERY <input checked="" type="checkbox"/>
CLIENT NAME <i>Solutions</i>	CLIENT PROJECT MANAGER <i>Kimberly Polly - Solutions</i>																
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St. Louis, MO</i>															EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/>		
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED							REMARKS					
DATE	TIME		X		4	2	2	1	-	1	1	1	←	→			
10/8/99	11:00		X														
10/8/99	TEMP BLANK		X														
RELINQUISHED BY: (SIGNATURE) <i>We Wright</i>			DATE <i>10/8/99</i>	TIME <i>2000</i>	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RELINQUISHED BY: (SIGNATURE)			DATE	TIME				
RECEIVED BY: (SIGNATURE) <i>We Wright</i>			DATE <i>10/8/99</i>	TIME <i>2000</i>	RECEIVED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE)			DATE	TIME				
RECEIVED FOR LABORATORY BY: (SIGNATURE)			DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:									
					<input type="checkbox"/> YES	<input type="checkbox"/> NO											

FedEx USA Airbill

FedEx Tracking Number 8155 1526 6261

1 From Please print and press here

Date 10/8/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Cork Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

Dept./Floor/Suite/Rm#

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference

First 20 characters will appear on invoice

23548.060.001

3 To

Recipient's Name Betsy Beaubien Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept./Floor/Suite/Rm#

To "HOLD" or FedEx location,
print FedEx address here

City SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111962862



Sender's Copy

4a Express Package Service

FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Early next business morning Delivery to subset locations

Packages up to 150 lbs.
Delivery commitment may be later in some areas.

FedEx 2Day* Second business day FedEx Express Saver* Third business day

* FedEx Letter Rate not available Minimum charge. One-ground rate

4b Express Freight Service

FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

Packages over 150 lbs.
Delivery commitment may be later in some areas.

5 Packaging

FedEx Letter* FedEx Pak*

* Declared value limit \$100

Other Pkg.
Includes FedEx Box, FedEx Mail and customer pkg.

6 Special Handling

Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day select ZIP codes

Sunday Delivery

Available for FedEx Priority Overnight to subset ZIP codes

HOLD Weekday at FedEx Location

Not available with FedEx First Overnight

HOLD Saturday at FedEx Location

Available for FedEx Priority Overnight and FedEx 2Day select locations

Does this shipment contain dangerous goods?

Over 100 items per check box

No Yes As per attached Shipper's Declaration

Yes Shipper's Declaration not required

Dry Ice Dry Ice & UN 106

Cargo Aircraft Only

7 Payment Bill to:

Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct No.

Credit Card No.

Exp Date

Total Packages	Total Weight	Total Declared Value*
1	45	\$.00

FedEx Use Only

8 Release Signature Sign to authorize delivery without obtaining signature.

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

SHP 800 - Rev. Date 11/98 - Part #1540135 - © 1994 FedEx - PRINTED IN U.S.A.

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AVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- LaRoche Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 1414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047
- Phone: (912) 354-7858
Phone: (904) 878-3994
Phone: (954) 421-7400
Phone: (334) 666-6633
Phone: (813) 885-7427
Phone: (504) 764-1100
- Fax: 352-0165
Fax: (904) 878-9504
Fax: (954) 421-2584
Fax: (334) 666-6696
Fax: (813) 885-7049
Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES										PAGE	OF				
Solutia St. Louis	1	23516	Bill to Solutia		CYANIDE (F0103)	MERCURY (F0104)	METAL (F0105)	TOTAL PLUS (F0107)	DETERGENT (F0108)	PCP (F0109)	PCP (F0110)	PCP (F0111)	PCP (F0112)	PCP (F0113)	PCP (F0114)					
PROJECT LOC. (State) ...TL	SAMPLER(s) NAME W.F. WRIGHT / DA THOMPSON		PHONE (311) 617-1550	FAX (311) 617-3266											<input checked="" type="checkbox"/> STANDARD REPORT <input type="checkbox"/> DELIVERY					
CLIENT NAME Solutia		CLIENT PROJECT MANAGER Kimberly Penny Solutia												<input type="checkbox"/> EXPEDITED REPORT <input type="checkbox"/> DELIVERY (surcharge)						
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, MO														Date Due:						
SAMPLE	DATE	TIME	SL NO.	SAMPLE IDENTIFICATION		AQUEOUS (WATER)	SOLID OR SEMI-SOLID	AIR	MONAQUEOUS (LIQUID OR SOLVENT, etc.)	LIQUID (w)	LIQUID (w/v)	LIQUID (v/v)	LIQUID (HNO ₃ , H ₂ O ₂)	LIQUID (HNO ₃ , H ₂ O ₂ , H ₂ S ₂ O ₈)	LIQUID (600)	NUMBER OF CONTAINERS SUBMITTED		REMARKS		
10/6/99	1210			SW-RA1-S2-MSD		X				4	2	2	1	1	1	1	1	1	-	
10/6/99	1210			TEMP BLANK		X														
RELINQUISHED BY: (SIGNATURE) S. Campbell				DATE 1/28/99	TIME 0800	RELINQUISHED BY: (SIGNATURE) A. J. Lee				DATE 10/6/99	TIME 0800	RELINQUISHED BY: (SIGNATURE) Kathy E. Wright				DATE 10/8/99	TIME 2000			
RECEIVED BY: (SIGNATURE) A. J. Lee				DATE 1/28/99	TIME 0800	RECEIVED BY: (SIGNATURE) Kathy E. Wright				DATE 10/8/99	TIME 0500	RECEIVED BY: (SIGNATURE) FedEx #815515266250				DATE 10/6/99	TIME 2000			
LABORATORY USE ONLY																LABORATORY REMARKS				
RECEIVED FOR LABORATORY BY: (SIGNATURE)				DATE	TIME	CUSTODY INTACT		CUSTODY SEAL NO.		SL LOG NO.										
						<input type="checkbox"/> YES <input type="checkbox"/> NO														

FedEx USA Airbill

8DA11
0215

From	1076799	Sender's FedEx Account Number	1187-9587-3
Date		Phone	(314) 842-4550
Sender's Name	Alan Clark		
Company	O'BRIEN & GERE		
Address	5000 CEDAR PLAZA PKWY STE 211		
City	SAINT LOUIS	State	MO
		ZIP	63128

2 Your Internal Billing Reference 23516.060.001

Not necessary if same as addressee

3 To Recipient's Name

Not necessary if same as addressee

4 Company

SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE
Not necessary if same as addressee

City SAVANNAH

Not necessary if same as addressee

State GA

Not necessary if same as addressee

ZIP 31404

5 Packaging

FedEx Letter*

FedEx 2Day*

FedEx 2Day Freight*

FedEx Express Saver*

FedEx Standard Overnight

FedEx 30Min Delivery

FedEx 20Min*

FedEx 10Day*

FedEx 10Day Freight*

FedEx 10Day Express

FedEx 10Day Air

FedEx 10Day Air Freight

FedEx 10Day Air Express

6 Special Handling

Same Day Delivery

FedEx Home Delivery

FedEx Business Day Delivery

FedEx Next Day Delivery

FedEx Saturday Delivery

FedEx International Delivery

FedEx Domestic International Delivery

7 Payment Method

Cash

Credit Card

Check

Cash/Check Only

Debit Card

Bank Card

ATM Card

Prepaid Card

8 Release Signature

48

Total Weight

10

Total Declared Value

10

FedEx Use Only

9 Total Weight

10

Total Declared Value

10

FedEx Use Only

10 Total Weight

10

Total Declared Value

10

FedEx Use Only

11 Total Weight

10

Total Declared Value

10

FedEx Use Only

12 Total Weight

10

Total Declared Value

10

FedEx Use Only

13 Total Weight

10

Total Declared Value

10

FedEx Use Only

14 Total Weight

10

Total Declared Value

10

FedEx Use Only

15 Total Weight

10

Total Declared Value

10

FedEx Use Only

16 Total Weight

10

Total Declared Value

10

FedEx Use Only

17 Total Weight

10

Total Declared Value

10

FedEx Use Only

18 Total Weight

10

Total Declared Value

10

FedEx Use Only

19 Total Weight

10

Total Declared Value

10

FedEx Use Only

20 Total Weight

10

Total Declared Value

10

FedEx Use Only

21 Total Weight

10

Total Declared Value

10

FedEx Use Only

22 Total Weight

10

Total Declared Value

10

FedEx Use Only

23 Total Weight

10

Total Declared Value

10

FedEx Use Only

24 Total Weight

10

Total Declared Value

10

FedEx Use Only

25 Total Weight

10

Total Declared Value

10

FedEx Use Only

26 Total Weight

10

Total Declared Value

10

FedEx Use Only

27 Total Weight

10

Total Declared Value

10

FedEx Use Only

28 Total Weight

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Total Declared Value

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FedEx Use Only

29 Total Weight

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Total Declared Value

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FedEx Use Only

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Total Declared Value

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FedEx Use Only

31 Total Weight

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FedEx Use Only

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41 Total Weight

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FedEx Use Only

42 Total Weight

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Total Declared Value

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FedEx Use Only

43 Total Weight

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Total Declared Value

10

FedEx Use Only

44 Total Weight

10

Total Declared Value

10

FedEx Use Only

45 Total Weight

10

Total Declared Value

10

FedEx Use Only

46 Total Weight

10

Total

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE *William E. Wright*

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive

St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

(SOL05 /FMS)

Contact: Mr. Alan Cork

Phone: 314-674-3402

Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

Total Number of
Containers:

8

Turn Around Time
(In Calendar Days):

Data to be reported to the state of MO.

Dioxin 6260

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.			Remarks
SW-RAZ-EB	10/8/99 1650	Cool, N ₂ , O ₂	Water	2L	X		
SW-RA1-S2-FD	10/8/99 1140	"	"	2L	X		
SW-RA1-S2-MSD				2L	X		
SW-RA1-S1-MS	10/8/99 1020	Cool, N ₂ , O ₂	Water	2L	X		
SW-RA1-S1-MSD	10/8/99 1030	"	Water	2L	X		
Temp Blank	—						

Relinquished By/Sign.

William E. Wright

Date/Time

10/8/99 2052

Received By/Sign.

Fed X # 815747919667

Relinquished By/Sign.

Date/Time

Received By/Sign.

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitol Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
- (4) Please indicate the preservation used for each sample.

279A-57

FedEx USA Airbill

FedEx
Tracking Number
8157 4791 9667

1 From Please print and print bold

Date 10/21/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Clark Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211 Dept./Floor/Suite/Rm #

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
Put 20 characters or less on line. 23518.060.001

3 To

Recipient's Name Frank Stevens Phone ()

Company TRIANGLE LABORATORIES

Address 801 CAPITOLA DR Dept./Floor/Suite/Rm #

We cannot deliver to PO boxes or P.O. ZIP codes.

To HOLD at FedEx location
print FedEx tracking number
City DURHAM State NC ZIP 27713

NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111963289



4 Express Package Service

- FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Same day delivery to select locations
- FedEx 2Day* Second business day FedEx Express Saver* Third business day

Packages up to 150 lbs.

Delivery commitment may be later in some areas.

* FedEx Letter Rate not available

Minimum charge: One-pound rate

4b Express Freight Service

- FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day

Packages over 150 lbs.

Delivery commitment may be later in some areas.

5 Packaging

- FedEx Letter* FedEx Pak* Other Pkg Includes FedEx Box, FedEx Bag, and common pug

* Declared value limit \$100

6 Special Handling

- Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location HOLD Saturday at FedEx Location
- Not available with FedEx First Overnight Not available with FedEx Priority Overnight and FedEx 2Day to select locations

- Does this shipment contain dangerous goods? One box must be checked
- No Yes As per attached Shippers Declaration Yes Shippers Declaration not required Dry Ice Dry Ice & UN 1845 Cargo Aircraft Only

7 Payment BN#: Enter FedEx Acct # or Credit Card No below

- Sender Acct. No. in Section 1 will be used Recipient Third Party Credit Card Cash/Check

FedEx Acct No _____ Exp Date _____

Total Packages 1 Total Weight 44 Total Declared Value* \$.00

*Our liability is limited to \$100 unless you declare a higher value. See back for details.

8 Release Signature Sign to authorize delivery without obtaining signatures

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

FDP 990 • Rev. Date 11/98 • Part #1540120 • © 1994 FedEx • PRINTED IN U.S.A.

359

RETAIN THIS COPY FOR YOUR RECORDS



JAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|--|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 12 J2 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

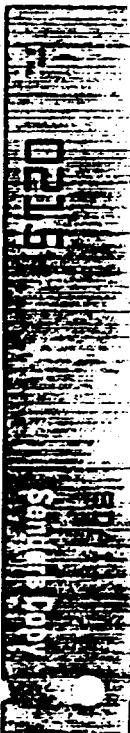
PROJECT REFERENCE Solutions Super Area 1		PROJECT NO. 23518	PO NUMBER B-11	MATRIX TYPE	REQUIRED ANALYSES							PAGE 1 OF 1			
PROJECT LOC. (State) IL	SAMPLER(s) NAME WEWRIGHT/DAT HUMPHSON	PHONE (311) 612-1550	FAX (314) 612-3266		TESTS (Oil, solvent, etc.)	PCBs (660)	SPC (5270C)	Cyanide (Fate)	MERCURY (7110A)	METAL STATUS (140.110)	TOTAL PHOS	FURANIC (200)	CHLOROPHYS (365.2)	PH (150.1152.2)	
CLIENT NAME Solutions		CLIENT PROJECT MANAGER Kimberly Perry - Solutions		AQUEOUS/WATER	HERBS (6151A)	PCPs (660)	SPC (5270C)	Cyanide (Fate)	MERCURY (7110A)	METAL STATUS (140.110)	TOTAL PHOS	FURANIC (200)	CHLOROPHYS (365.2)	PH (150.1152.2)	
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis				SOLID OR SEMI-SOLID	LIQUID (Oil, solvent, etc.)										
SAMPLE	SL NO.	SAMPLE IDENTIFICATION													
DATE	TIME														
10/8/99	1530 1640	SW-RA2-S1(creek)		X	4	2	2	1	1	1	1	1	1	1	
NUMBER OF CONTAINERS SUBMITTED															REMARKS
279A-58															
0/8/99	TEMP BLANK		X												
RELINQUISHED BY: (SIGNATURE) Tawni		DATE 10/8/99	TIME 7000	RELINQUISHED BY (SIGNATURE).			DATE	TIME	RELINQUISHED BY (SIGNATURE)				DATE	TIME	
RECEIVED BY: (SIGNATURE) Tawni		DATE 10/8/99	TIME 2000	RECEIVED BY (SIGNATURE)			DATE	TIME	RECEIVED BY (SIGNATURE)				DATE	TIME	

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS:

CLIENTS FIELD COPY

FedEx USA Airbill 8155 1526 6170



From Name and address

Date 10/8/99

Sender's Account Number

1182-9587-3

Sender's Name

Alma Cark

Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS

State MO

ZIP 63128

2 Your Internal Billing Reference

23548.060.001

3 To Recipient's Name

Betty Beuchep Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE

City SAVANNAH

State GA

ZIP 31404

* NOT a FedEx location

or point of service

4 NEW Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-GO-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com
By using this Airbill you agree to the service's conditions on the back of this label
and in our current Service Guide, including terms that limit our liability

0111962862

RETAIN THIS COPY FOR YOUR RECORDS

- 4a Express Package Service** FedEx Priority Overnight FedEx Standard Overnight FedEx Express Next Day FedEx First Overnight
- FedEx 2010™ FedEx Express Saver® FedEx Ground® FedEx 3010™
- FedEx Freight® FedEx 2010 Freight FedEx 3010 Freight
- FedEx Pak® FedEx Pkg. FedEx Office Pak® FedEx Home Delivery

5 Packaging

Perishable

FedEx Pak®

Other Pkg.

FedEx Home Delivery

FedEx Office Pak®

FedEx Home

6 Special Handling

Same Day Delivery

Sunday Delivery

HOLD Wednesday

HOLD Saturday

FedEx Location

FedEx Home

Hold for Pickup

Hold for Delivery

Hold for Return

Hold for Change

Hold for Return

Hold for Change

Daytime Delivery

Nighttime Delivery

Direct Delivery

Direct Return

Direct Change

Direct Return

Hold for Change

Hold for Return

Hold for Direct

279A-59

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359

**SL ~AVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 414 SW 12th Avenue, Deerfield Beach, FL 33442
 900 Lakeside Drive, Mobile, AL 36693
 6712 Benjamin Road, Suite 100, Tampa, FL 33634
 100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858
 Phone: (904) 878-3994
 Phone: (954) 421-7400
 Phone: (334) 666-6633
 Phone: (813) 885-7427
 Phone: (504) 764-1100
 Fax: (912) 352-0165
 Fax: (904) 878-9504
 Fax: (954) 421-2584
 Fax: (334) 666-6696
 Fax: (813) 885-7049
 Fax: (504) 725-1163

PROJECT REFERENCE	PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUIRED ANALYSES	PAGE 1 OF
Soln. SuperTech 1	23516	B.140 Soln.		180.0	
PROJECT LOC.	SAMPLER(S) NAME	PHONE (711) 812-1150	FAX (311) 212-706		
(State)	WFL WILDLIFE/FAUNA				
CLIENT NAME	CLIENT PROJECT MANAGER				
CLIENT ADDRESS (CITY, STATE, ZIP) Gainesville, FL					
SAMPLE	SL. NO.	SAMPLE IDENTIFICATION			
DATE	TIME				
4/6/98 1150		SN-R42-E3			
NUMBER OF CONTAINERS SUBMITTED					
4	2	2	1	1	1
REMARKS					
<input checked="" type="checkbox"/> STANDARD REPORT <input type="checkbox"/> EXPEDITED REPORT DELIVERY (surcharge) <input type="checkbox"/> DELIVERY					
RElinquished by: (Signature)	DATE	TIME	RElinquished by: (Signature)	DATE	TIME
Received by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME
RECEIVED BY (SIGNATURE)	DATE	TIME	RECEIVED BY (SIGNATURE)	DATE	TIME
4/6/98			4/6/98		
LABORATORY USE ONLY					
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.
LABORATORY REMARKS:					
<input type="checkbox"/> YES <input type="checkbox"/> NO					

FedEx USA Airbill

1 From: Please print and press hard
 Date 10/8/99 Sender's FedEx Account Number 1187-9587-3

Sender's Name Alan Cark Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference
First 14 characters will appear on invoice 23548.060.001

3 To Recipient's Name Betsy Bensley Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LA ROCHE AVE
We cannot deliver to P.O. Boxes or P.O. ZIP codes

City SAVANNAH State GA ZIP 31404

NEW Peel and Stick FedEx USA Airbill™

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0111962862



4 Express Package Service
 FedEx Priority Overnight Next business morning FedEx Standard Overnight Next business afternoon FedEx First Overnight Evening or business morning delivery to select locations
 FedEx 2Day* Second business day FedEx Express Saver* Third business day
* FedEx Letter Plus not available. Minimum charge. One pound rate.

4b Express Freight Services
 FedEx 1Day Freight* Next business day FedEx 2Day Freight Second business day FedEx 3Day Freight Third business day
Delivery commitment may be later in some areas.

5 Packaging
 FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx Mail, and customer ship

6 Special Handling
 Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day Overnight to select ZIP codes Sunday Delivery Available for FedEx Priority Overnight to select ZIP codes HOLD Weekday at FedEx Location Not available with FedEx Next Overnight HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations
Does this shipment contain dangerous goods?
One box must be checked
 NO Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice Specify L, LN, LN2 Cargo Aircraft Only

7 Payment Bill to: Enter FedEx Acct No. or Credit Card No. below
 Sender, Acct No. in Section 1 Recipient Third Party Credit Card Cash/Check

FedEx Acct No. Exp Date
 Credit Card No.
 Total Packages 1 Total Weight 4.7 Total Declared Value* \$.00
FedEx Use Only

8 Release Signature Sign or authority delivery without checking signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

359

RETAIN THIS COPY FOR YOUR RECORDS

SL SAVANNAH LABORATORIES & ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- 12 LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-9504
 414 SW 12th Avenue, Deerfield Beach, FL 33442 Phone: (954) 421-7400 Fax: (954) 421-2584
 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049
 1100 Alpha Drive, Suite 110, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE Project Svcet Acel		PROJECT NO. 23518		PO NUMBER B-11									
PROJECT LOC. (State) IL	SAMPLER(s) NAME WF WRIGHT/DAVID MISON		PHONE (311) 812-1-50 FAX (311) 812-3266		Matrix Type AQUEOUS/WATER SOLID OR SEMI-SOLID NONAQUEOUS/LIQUID/OIL/SOLVENT/ETC		MATRIX TYPE PESI (315A) HECES (315A) TCC (600)		REQUIRED ANALYSES CYANIDE (3103) METAL S (1404) HADONICS (1201) TOTAL FILTRATE (3101) FUEL OIL (3105) PH (3102)		PAGE / OF /		
CLIENT NAME Solutia		CLIENT PROJECT MANAGER Kimberly Perry - Solutia											
CLIENT ADDRESS (CITY, STATE, ZIP) St. Louis, MO													
SAMPLE	SL NO.	SAMPLE IDENTIFICATION 1/8/99 1530 SW-RA2-S2 (pond)		AIR	NUMBER OF CONTAINERS SUBMITTED 4 2 2 1 1 1 1 1 1 1 1					REMARKS			
DATE 1/8/99	TIME 1530												
RELINQUISHED BY: (SIGNATURE) 1/8/99		DATE 1/8/99	TIME 1:00	RELINQUISHED BY (SIGNATURE)		DATE	TIME	RELINQUISHED BY (SIGNATURE)		DATE	TIME		
RECEIVED BY: (SIGNATURE) Tel# 8155 1526 6169		DATE 1/8/99	TIME 2000	RECEIVED BY (SIGNATURE)		DATE	TIME	RECEIVED BY (SIGNATURE)		DATE	TIME		

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS

YES NO

FedEx USA AirMail 8155 1526 6169

1. Final shipping instructions

Date **10/6/99**

Sender's FedEx
Account Number **1187-9587-3**

Sender's
Name **Alan Cook**

Phone **(314) 842-4550**

Company **O'BRIEN & CERE**

Address **5000-CEDAR PLAZA PKWY STE 211**

City **SAINT LOUIS** State **MO** ZIP **63128**

2. Your Internal Billing Reference
Leave blank if you don't have one.

3. In
Recipients
Name **Betsy Beuchamp** Phone **(912) 354-7858**

Company **SAVANNAH LABORATORIES**

Address **1021A ROCHE AVE**

City **SAVANNAH** State **GA** ZIP **31404**

NEW P&P and Stick FedEx USA AIR MAIL

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By signing this label you agree to the service conditions on the back of this Airbill
and our current Service Guide, including terms that limit our liability

279A-63

RETAIN THIS COPY FOR YOUR RECORDS

<input checked="" type="checkbox"/> Business Package Service		<input type="checkbox"/> FedEx Priority Overnight		<input type="checkbox"/> FedEx Standard Overnight	
<input type="checkbox"/> FedEx 2 Day*		<input type="checkbox"/> FedEx Express Saver*		<input type="checkbox"/> FedEx Express Saver*	
<input type="checkbox"/> FedEx 2 Day Freight*		<input type="checkbox"/> FedEx 2 Day Freight		<input type="checkbox"/> FedEx 2 Day Freight	
<input type="checkbox"/> FedEx 10 Day Freight*		<input type="checkbox"/> FedEx 10 Day Freight		<input type="checkbox"/> FedEx 10 Day Freight	
<input type="checkbox"/> FedEx Ground		<input type="checkbox"/> FedEx Pak®		<input type="checkbox"/> FedEx Pak®	
<input type="checkbox"/> Packaging		<input type="checkbox"/> Other		<input type="checkbox"/> Other	
<input checked="" type="checkbox"/> Special Handling		<input type="checkbox"/> Saturday Delivery		<input type="checkbox"/> HOLD Weekday	
<input type="checkbox"/> Small Parcel		<input type="checkbox"/> Available for FedEx Priority		<input type="checkbox"/> At FedEx Location	
<input type="checkbox"/> Medium Parcel		<input type="checkbox"/> Delivery to Next ZIP Code		<input type="checkbox"/> At FedEx Location	
<input type="checkbox"/> Large Parcel		<input type="checkbox"/> Delivery to Next ZIP Code		<input type="checkbox"/> Delivery to Next ZIP Code	
<input type="checkbox"/> Small Box		<input type="checkbox"/> Drop Off		<input type="checkbox"/> Drop Off	
<input type="checkbox"/> Medium Box		<input type="checkbox"/> Drop Off		<input type="checkbox"/> Drop Off	
<input type="checkbox"/> Large Box		<input type="checkbox"/> Drop Off		<input type="checkbox"/> Drop Off	
<input type="checkbox"/> Small Box		<input type="checkbox"/> Cargo Aircraft Only		<input type="checkbox"/> Cargo Aircraft Only	
<input type="checkbox"/> Medium Box		<input type="checkbox"/> Cash/Credit Card		<input type="checkbox"/> Cash/Credit Card	
<input type="checkbox"/> Large Box		<input type="checkbox"/> Cash/Credit Card		<input type="checkbox"/> Cash/Credit Card	
<input type="checkbox"/> Small Box		<input type="checkbox"/> Cash/Credit Card		<input type="checkbox"/> Cash/Credit Card	
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<input type="checkbox"/> Medium Box		<input type="checkbox"/> Cash/Credit Card		<input type="checkbox"/> Cash/Credit Card	
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<input type="checkbox"/> Small Box					



SAVANNAH LABORATORIES

& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

- | | | |
|---|-----------------------|---------------------|
| <input checked="" type="checkbox"/> 2 LaRoche Avenue, Savannah, GA 31404 | Phone: (912) 354-7858 | Fax: (912) 352-0165 |
| <input type="checkbox"/> 2846 Industrial Plaza Drive, Tallahassee, FL 32301 | Phone: (904) 878-3994 | Fax: (904) 878-9504 |
| <input type="checkbox"/> 414 SW 12th Avenue, Deerfield Beach, FL 33442 | Phone: (954) 421-7400 | Fax: (954) 421-2584 |
| <input type="checkbox"/> 900 Lakeside Drive, Mobile, AL 36693 | Phone: (334) 666-6633 | Fax: (334) 666-6696 |
| <input type="checkbox"/> 6712 Benjamin Road, Suite 100, Tampa, FL 33634 | Phone: (813) 885-7427 | Fax: (813) 885-7049 |
| <input type="checkbox"/> 100 Alpha Drive, Suite 110, Destrehan, LA 70047 | Phone: (504) 764-1100 | Fax: (504) 725-1163 |

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: (SIGNATURE) DATE TIME CUSTODY INTACT CUSTODY SEAL NO. SL LOG NO. LABORATORY REMARKS

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

(SOL05 /FMS)

Data to be reported to the state of MO.

Contact: Mr. Alan Cork

Phone: 314-674-3402

Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

**Total Number of
Containers:**

8

Turn Around Time (In Calendar Days):

279A-66

Refined & Fished By/Sign.

Date/Time

Received By/Sign

Relinquished By/Sign.

Date/Time

Received By/Sign.

Received for Laboratory By/Signature

Date/Time

Send Samples to: **Triangle Laboratories, Inc.**

Attn: Sample Custodian

www.Example-Busines

Durham, NC 2771

(919) 544-5729 • Fax: (91

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.**
(2) Verify analysis, check appropriate boxes for each sample.

(3) Enter the sample ID to be used when reporting the samples.
(4) Please indicate the preservation used for each sample.

FedEx USA Airbill

8157 4791 9645

1 From Print name and firm name
 Date 10/6/99 Sender's FedEx
Account Number

1187-9587-3

Sender's Name Tony Finch Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

2 Your Internal Billing Reference

Print 30 characters and update on change 23546.020.005

3 To
 Recipient's Name Frank Stevens Phone

Company TRIANGLE LABORATORIES

Address B01 CAPITOLA DR

We cannot deliver to P.O. Boxes or P.O. Box codes. Dept./Floor/Suite/Room

To FedEx Office or FedEx location,
 give FedEx address here
 City DURHAM State NC ZIP 27713

NEW Peel and Stick FedEx USA Airbill™!
 See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
 and in our current Service Guide, including terms that limit our liability.

0111963289

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Express Package Service		
<small>Packages up to 100 lbs. Delivery commitment may be later in remote areas.</small>		
<input checked="" type="checkbox"/> FedEx Priority Overnight <small>Next business morning</small>	<input type="checkbox"/> FedEx Standard Overnight <small>Next business afternoon</small>	<input type="checkbox"/> FedEx First Overnight <small>Excludes next business morning Delivery to select locations</small>
<input type="checkbox"/> FedEx 2Day* <small>Second business day</small>	<input type="checkbox"/> FedEx Express Saver* <small>Third business day</small>	<small>* FedEx Letter does not available Minimum charge \$10 per pound rate</small>
Express Freight Service		
<small>Packages over 100 lbs. Delivery commitment may be later in remote areas.</small>		
<input type="checkbox"/> FedEx 1Day Freight* <small>Next business day</small>	<input type="checkbox"/> FedEx 2Day Freight <small>Second business day</small>	<input type="checkbox"/> FedEx 3Day Freight <small>Third business day</small>
<small>* Call for Estimate rates</small>		
Packaging		
<small>Declared value limit \$1000</small>		
<input type="checkbox"/> FedEx Letter* <small>Includes FedEx Box, FedEx Mail, and FedEx Pak</small>	<input type="checkbox"/> FedEx Pak*	<input checked="" type="checkbox"/> Other Pak <small>Includes FedEx Box, FedEx Mail, and FedEx Pak</small>

Special Handling		
<input checked="" type="checkbox"/> Saturday Delivery <small>Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes</small>	<input type="checkbox"/> Sunday Delivery <small>Available for FedEx Priority Overnight to select ZIP codes</small>	<input type="checkbox"/> HOLD Weekday <small>at FedEx Location Not available with FedEx First Overnight</small>
<input type="checkbox"/> HOLD Saturday <small>Available for FedEx Priority Overnight and FedEx 2Day to select locations</small>	<input type="checkbox"/> HOLD Saturday <small>at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations</small>	
<small>One box must be checked</small>		
<input type="checkbox"/> No	<input type="checkbox"/> Yes	<input type="checkbox"/> Yes <small>As per attached Shipper's Declaration not required</small>
<small>Shipper's Declaration not required</small>		
<small>Dangerous Goods cannot be shipped in FedEx packaging</small>		
<input type="checkbox"/> Dry Ice <small>By Lb. & Lb 144</small>		
<input type="checkbox"/> Cargo Aircraft Only		

Payment Bill to: <input type="text"/> Enter FedEx Acct. No. or Credit Card No. below				
<input checked="" type="checkbox"/> Sender <small>Acct. No. on Section 1 will be billed</small>	<input type="checkbox"/> Recipient	<input type="checkbox"/> Third Party	<input type="checkbox"/> Credit Card	<input type="checkbox"/> Cash/Check

<small>FedEx Acct. No. Credit Card No.</small>	<small>Exp. Date</small>	
Total Packages	Total Weight	Total Declared Value*
<u>1</u>	<u>4.5</u>	<u>\$ 00</u>

* Our liability is limited to \$100 unless you declare a higher value. See back for details

8 Release Signature Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
 and agree to indemnify and hold us harmless from any resulting claims

SPR 999 Rev. Date 11/98 Part #1540128 © 1994 FedEx • PRINTED IN U.S.A.

359

CLIENT CHAIN OF CUSTODY

SAMPLER'S SIGNATURE

Project/Quote 04939/9900001069

From (1): Solutia, Inc.
575 Maryville Center Drive
St. Louis, MO 63141

Project (1): Sauget Area 1 Support Sampling

Contact: Mr. Alan Cork

Phone: 314-674-3402

Fax: 314-674-8957

P.O.# (1): _____

Analysis Wanted (2):

Total Number of
Containers:Turn Around Time
(In Calendar Days):

(SOL05 /FMS)

Data to be reported to the state of MO.

Dioxin (820)

Sample ID (3)	Date / Time	Preservation (4)	Matrix	Sample Amt.					Remarks
SW-RA2-S1 Creek	10/8/99 1640	Cool, Na_2SO_3	Surface Water	2 l	X				
SW-RA1-S1	10/8/99 1000	"	"	"	X				
SED-RA2-S1 EB	10/8/99 1330	"	Water	"	X				
SW-RA1-S2	10/8/99 1130	"	Surface water	"	X				
SED-RA2-S1	10/8/99 1600	Cool	Sed +	1/2 l	X				
SED-RA2-S1 FD	10/8/99 1600	Cool	"	1 l	X				
SED-RA1-S1	10/8/99 0930	Cool	"	1 l	X				
SED-RA1-S1-MS	10/8/99 0930	Cool	"	1 l	X				
SED-RA1-S1-MD	10/8/99 0930	Cool	"	1 l	X				
SED-RA1-S2	10/8/99 1130	Cool	"	1 l	X				

Relinquished By/Sign.	Date/Time	Received By/Sign.	Relinquished By/Sign.	Date/Time	Received By/Sign.
<i>Allen S. Thompson</i>	10/8/99 2000	TedX #815747919656			

Received for Laboratory By/Signature

Date/Time

Send Samples to: Triangle Laboratories, Inc.

Attn: Sample Custodian

801 Capitol Drive

Durham, NC 27713 USA

Phone: (919) 544-5729 • Fax: (919) 544-5491

Directions:

- (1) Provide and/or correct client and project information.
- (2) Verify analysis, check appropriate boxes for each sample.

- (3) Enter the sample ID to be used when reporting the samples.
- (4) Please indicate the preservation used for each sample.

FedEx USA Airbill

8157 4791 9656

1 From <small>Fax or print and press here</small>		Sender's FedEx Account Number	8157 4791 9656
Date	10/8/99	1187-9587-3	
Sender's Name	Alan Clark		
Company	D'OBRIEN & GERE		
Address	5000 CEDAR PLAZA PKWY STE 211		
City	SAINT LOUIS	State	MO ZIP 63128
2 Your Internal Billing Reference <small>First 24 characters will appear on invoice</small>	23548.060.001		
3 To Recipient's Name	Frank Stevens		
Company	TRIANGLE LABORATORIES		
Address	801 CAPITOLA DR		
<small>We cannot deliver to P.O. Boxes or P.O. ZIP codes</small>			
To HOLD at FedEx location, print FedEx address here:			
City	DURHAM	State	NC ZIP 27713

NEW Peel and Stick FedEx USA Airbill™

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0111963289

 Senders Copy			
4a Express Package Service			
<input checked="" type="checkbox"/> FedEx Priority Overnight <input type="checkbox"/> FedEx Standard Overnight <small>Next business morning</small> <small>Delivery commitment may be later in same night</small> <input type="checkbox"/> FedEx 2Day* <input type="checkbox"/> FedEx Express Saver* <small>Second business day</small> <small>Third business day</small> <small>* FedEx Letter Rate not available Minimum package weight required</small>			
4b Express Freight Service			
<input type="checkbox"/> FedEx 1Day Freight* <input type="checkbox"/> FedEx 2Day Freight <small>Next business day</small> <small>Second business day</small> <input type="checkbox"/> FedEx 3Day Freight <small>Third business day</small>			
<small>* Call for Confirmation</small>			
5 Packaging			
<input type="checkbox"/> FedEx Letter* <input type="checkbox"/> FedEx Pak* <input checked="" type="checkbox"/> Other Pak. <small>Includes FedEx Box, FedEx Bubble, and cushioning pads</small>			
6 Special Handling			
<input checked="" type="checkbox"/> Saturday Delivery <input type="checkbox"/> Sunday Delivery <small>Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes</small> <small>Available for FedEx Priority Overnight to select ZIP codes</small> <input type="checkbox"/> HOLD Weekday <input type="checkbox"/> HOLD Saturday <small>Not available with FedEx First Overnight</small> <small>at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to select locations</small>			
<small>Does this shipment contain dangerous goods? One box must be checked.</small>			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes As per packed Shipper's Declaration <input type="checkbox"/> Yes Shipper's Declaration not required			
<small>Dangerous Goods cannot be shipped in FedEx packaging</small>			
7 Payment			
<input checked="" type="checkbox"/> Sender <small>Acct. No. in Section 1 will be billed</small> <input type="checkbox"/> Recipient <input type="checkbox"/> Third Party <input type="checkbox"/> Credit Card <input type="checkbox"/> Cash/Check			
<small>Enter FedEx Acct. No. or Credit Card No. below</small>			
<small>FedEx Acct. No. Credit Card No.</small>			
Total Packages	Total Weight	Total Declared Value	<small>FedEx Use Only</small>
1	69	\$ 1.00	
<small>* Our liability is limited to \$100 unless you declare a higher value. See back instructions.</small>			
8 Release Signature			
<small>Ship to authority delivery without advancing signature</small>			
<small>By signing you acknowledge to deliver this statement without obtaining a signature and agree to indemnify and hold FedEx harmless from any resulting claims.</small>			
<small>©1999 FedEx. Rev. Date 11/98 - FedEx is a registered trademark of FedEx Corporation in the U.S.A.</small>			

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279A-69

359

SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC.

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

LaRoche Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
 2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (904) 878-3994 Fax: (904) 878-9504
 900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6696
 6712 Benjamin Road, Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049
 100 Alpha Drive, Suite 110, Destrehan, LA 70047 Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE		PROJECT NO.	PO NUMBER	MATRIX TYPE	REQUESTED ANALYSES								PAGE	OF											
PROJECT LOC. (State)	SAMPLER(s) NAME	PHONE																							
JL	William E Wright		FAX																						
CLIENT NAME		CLIENT PROJECT MANAGER																							
Savannah-Tech		K Peiry																							
CLIENT ADDRESS (CITY, STATE, ZIP)		ST Louis, MO 63110																							
SAMPLE		SL NO.	SAMPLE IDENTIFICATION		ACQUEOUS (WATER)	AIR	SOLID OR SEMI-SOLID	LIQUID (OIL, SOLVENTS)	ALL	COOL	MINUS	WARM	COOL	COOL	TOTAL	VOC	PCP	PCB	PCDD	PCDF	PCDD/F	PCDF/F	PCDD/PCDF	PCDD/F/PCDF	STANDARD REPORT DELIVERY
DATE	TIME				X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	<input checked="" type="checkbox"/>
12-04-00	1130		SLW-PDC-DS		X																				Date Due:
12-04-00	1150		SLW-PDC-DS- 115 -115		X																				
12-04-00	1205		SLW-PDC-DS-115D		X																				
12-04-00	1205		SLW-PDC-DS-		X																				
12-04-00	1305		SLW-PDC-DS-FD		X																				
12-04-00	1315		BSSED-PDC-115-EB		X																				
12-04-00	1600		Trip Blank		X																				
						</td																			

USA Airbill FedEx
Tracing Number 8187 0379 1874

204-00 Sender's FedEx Account Number 1187-9587-3

Bill Wright Phone (314) 842-4550

O'BRIEN & GERE

12250 WEBER HILL RD

Dept/Pack/Ship/Rm

SAINT LOUIS State MO ZIP 63127

Terminal Billing Reference 623548.060.001
Cart will appear on invoice

BETSY BEAUBEAUCHAMP Phone (912) 354-7858

SAVANNAH LABRATORIES

5102 LAROCHE AVE

FedEx address, pre-FedEx address

We cannot deliver to P.O. boxes or P.O. ZIP codes

Dept/Pack/Ship/Rm

NNAH State GA ZIP 31404

NEW FedEx and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of the Airbill and in our current Service Guide, including terms that limit our liability.

279A-71

0126730793

SDA22

0215

4a

FedEx Priority Overnight

Next business morning

FedEx Standard Overnight

Next business afternoon

Packages up to 150 lbs.

Delivery commitment may be used in some areas

FedEx First Overnight

Earliest next business morning delivery to select locations

FedEx 2Day*

Second business day

FedEx Express Saver*

Third business day

* FedEx Ground/Labor fees not included

Minimum charges (line-round trip)

4b

FedEx 1Day Freight*

Next business day

FedEx 2Day Freight

Second business day

Packages over 150 lbs.

Delivery commitment may be used in some areas

FedEx 3Day Freight

Third business day

* Call for Confirmation _____

* Domestic value limit \$200

5

FedEx Envelope/Letter*

FedEx Pak*

Other Pkg.

Includes FedEx Box, FedEx Tube, and customer box

SATURDAY Delivery

Available for FedEx Priority

Overnight and FedEx 2Day

Second ZIP codes

SUNDAY Delivery

Available for FedEx Priority

Overnight in select ZIP codes

HOLD Weekday

at FedEx Location

Not available with

FedEx First Overnight

HOLD Saturday

at FedEx Location

Available for FedEx Priority

Overnight and FedEx 2Day

Does this shipment contain dangerous goods?

No

Yes

As per attached

Shipper's Declaration

not required

Yes

Shipper's Declaration

not required

Dangerous Goods cannot be shipped in FedEx packaging

Dry Ice

Dry Ice & LN45

Cargo Aircraft Only

7

Sender

Recipient

Third Party

Recipient

Third Party

Credit Card

Cash/Check

FedEx Acct. No.

Credit Card Acct.

Ex. Date

Total Packages

Total Weight

Total Declared Value*

78

\$.00

*Our liability is limited to \$100 unless you declare a higher value. See back for details

FedEx User Only

8SE - 150-15 Sign to indicate delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT REFERENCE <i>St. Louis Area 1</i>		PROJECT NO. 23598	PROJECT LOCATION (STATE) IL	MATRIX TYPE	REQUIRED ANALYSES		PAGE 1 OF 1
STL (LAB) PROJECT MANAGER <i>B Beuchlmann</i>	R.O. NUMBER <i>SLMPC 8.11 10 Solutions</i>	CONTRACT NO.					STANDARD REPORT DELIVERY
CLIENT (SITE) PN <i>R. Perry</i>	CLIENT PHONE	CLIENT FAX					DATE DUE _____
CLIENT NAME <i>Solutions Inc</i>	CLIENT EMAIL						EXPEDITED REPORT DELIVERY (SURCHARGE) 0
CLIENT ADDRESS <i>St. Louis, MO</i>							DATE DUE _____
COMPANY CONTRACTING THIS WORK (if applicable):							NUMBER OF COOLERS SUBMITTED PER SHIPMENT:
SAMPLE	SAMPLE IDENTIFICATION			NUMBER OF CONTAINERS SUBMITTED			REMARKS
DATE	TIME				1	1	1
12-04-00	1245	SW - PDC-45			1	2	2
279A-72					1	2	2
00-01-02	<i>Tony Blant</i>				1	2	2
RELINQUISHED BY: (SIGNATURE) <i>J Swafford</i>	DATE 12/8/99	TIME 8:45	RELINQUISHED BY: (SIGNATURE) <i>William E. Elliott</i>	DATE 12/11/00	TIME 11:21	RELINQUISHED BY: (SIGNATURE)	DATE TIME
RECEIVED BY: (SIGNATURE) <i>William E. Elliott</i>	DATE 12/10/99	TIME 1000	RECEIVED BY: (SIGNATURE) <i>1-01-01</i> 8187-0379-1896	DATE 12/11/00	TIME 11:21	RECEIVED BY: (SIGNATURE)	DATE TIME
LABORATORY USE ONLY							
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL N ^o	STL-SL LOG NO.	LABORATORY REMARKS:	

5102 LaPlante Avenue, Savannah, GA 31404
 2846 Industrial Plaza Drive, Tallahassee, FL 32301
 900 Lakeside Drive, Mobile, AL 36693
 6712 Bennington Rd., Suite 100, Tampa, FL 33634

Phone: (912) 354-7858 Fax: (912) 352-0165
 Phone: (850) 878-3994 Fax: (850) 878-9504
 Phone: (334) 666-6633 Fax: (334) 666-6696
 Phone: (813) 885-7427 Fax: (813) 885-7049

ed FedEx USA Airbill FedEx Tracing Number 8187 0379 1896

Please print and press here
Date 02-04-00 Sender's FedEx Account Number 1187-9587-3

Sender's Name Bill Wright Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

City SAINT LOUIS State MO ZIP 63127

Internal Billing Reference 623548.060.001
* Internal Billing Reference
* 24 characters will appear on invoice

Recipient's Name BETSY BEAUBEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes.

City SAVANNAH State GA ZIP 31404

NEW! Peel and Stick FedEx USA Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of the Airbill
and in our current Service Guide, including terms that limit our liability

0126730793

SDAZZ

0215

4a FedEx Priority Overnight FedEx Standard Overnight FedEx First Overnight
FedEx business morning FedEx business afternoon FedEx first business morning delivery to select accounts

FedEx 2Day* FedEx Express Saver* FedEx International Rate not available
Second business day Third business day Minimum charge One-round trip

4b FedEx 1Day Freight* FedEx 2Day Freight FedEx 3Day Freight
FedEx business day Second business day Third business day Delivery commitment may be less in some areas

* Call for Confirmation FedEx Pak* Other Pkg
Decelerated value limit \$500
Includes FedEx Box, FedEx Tube, and consumer size

5 FedEx Saturday Delivery FedEx Sunday Delivery FedEx Hold Saturday
Available for FedEx Priority, Overnight and FedEx 2Day delivery to select ZIP codes at FedEx Location
or second ZIP codes FedEx Saturday Delivery at FedEx Location
Available for FedEx Priority, Overnight and FedEx 2Day delivery to select ZIP codes

Does this shipment contain dangerous goods?
 Yes As per attached Shipper's Declaration Yes Shipper's Declaration not required Dry Ice On Ice & UN 1845 Cargo Aircraft Only
Dangerous Goods cannot be shipped in FedEx packaging

6 FedEx Hold Saturday FedEx Hold Sunday FedEx Hold Saturday at FedEx Location
Available for FedEx Priority, Overnight and FedEx 2Day delivery to select ZIP codes at FedEx Location
or second ZIP codes FedEx Hold Sunday at FedEx Location
Available for FedEx Priority, Overnight and FedEx 2Day delivery to select ZIP codes

Sender Recipient Third Party Credit Card Cash/Check
Select one in Section I will be listed

FedEx Acct. No. Exp Date
Credit Card No. Total Packages Total Weight Total Declared Value/
S. .00 FedEx Use Only

7 **SHIPPING INFORMATION** **RECEIVING INFORMATION** **NOTES**
 Sender Recipient Third Party Credit Card Cash/Check
Select one in Section I will be listed

8 Release Signature Sign to authorize delivery without obtaining signature
By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

5102 LaFache Avenue, Savannah, GA 31404 Phone: (912) 354-7858 Fax: (912) 352-0165
2846 Industrial Plaza Drive, Tallahassee, FL 32301 Phone: (850) 878-3994 Fax: (850) 878-9504
900 Lakeside Drive, Mobile, AL 36693 Phone: (334) 666-6633 Fax: (334) 666-6698
6712 Benham Rd., Suite 100, Tampa, FL 33634 Phone: (813) 885-7427 Fax: (813) 885-7049

LABORATORY USE ONLY

RECEIVED FOR LABORATORY BY: DATE TIME CUSTODY INTACT CUSTODY SEAL NO. STL-SL LOG NO. LABORATORY REMARKS:
 (SIGNATURE) () () () () () ()



FedEx
Tracking
Number

8187 0379 1900

0215

Please print and attach here.
02-04-00 Sender's FedEx Account Number 1187-9587-3

Sender's name Bill Wright Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

SAINT LOUIS State MO ZIP 63127

Our Internal Billing Reference
(24 characters will appear on invoice) 023548.060.001

Customer's name BETSY BEAUBEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

HOLD at FedEx location, print FedEx address.

SAVANNAH State GA ZIP 31404

INTERNATIONAL AIR MAIL AND AIR FREIGHT

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0126730793

4a <input type="checkbox"/> 1985 FedEx Service		
<input checked="" type="checkbox"/> FedEx Priority Overnight Next business morning		
<input type="checkbox"/> FedEx Standard Overnight Next business evening		
<input type="checkbox"/> FedEx 2Day® Second business day		
<input type="checkbox"/> FedEx Express Saver® Third business day		
<small>* FedEx Express Saver® does not guarantee Minimum charge. One-ounce rate applies.</small>		
4b <input type="checkbox"/> 1986 FedEx Service		
<input type="checkbox"/> FedEx 1Day Freight® Next business day		
<input type="checkbox"/> FedEx 2Day Freight Second business day		
<input type="checkbox"/> FedEx 3Day Freight Third business day		
<small>* Declared value over \$500. Delivery commitment may be later in some areas.</small>		
4c <input type="checkbox"/> 1987 FedEx Service		
<input type="checkbox"/> FedEx Envelope/Letter®		
<input type="checkbox"/> FedEx Pak®		
<input checked="" type="checkbox"/> Other Pkg Includes FedEx Box, FedEx Total, and customer pkg.		
5 <input type="checkbox"/> 1988 FedEx Service		
<input type="checkbox"/> FedEx Saturday Delivery Available for FedEx Priority Overnight and FedEx 2Day to selected ZIP codes		
<input type="checkbox"/> HOLD Weekday at FedEx Location Not available with FedEx First Overnight		
<input type="checkbox"/> HOLD Saturday at FedEx Location Available for FedEx Priority Overnight and FedEx 2Day to selected locations		
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes As per attached Shipper's Declaration Dangerous Goods cannot be shipped in FedEx packaging		
<input type="checkbox"/> Yes Shipper's Declaration not required		
<input type="checkbox"/> Dry Ice Dry Ice & UN 1995		
<input type="checkbox"/> Cargo Aircraft Only		
6 <input type="checkbox"/> 1989 FedEx Service		
<input checked="" type="checkbox"/> Sender <input type="checkbox"/> Recipient <input type="checkbox"/> Third Party <input type="checkbox"/> Credit Card <input type="checkbox"/> Cash/Check		
FedEx Agent No Credit Card No		
7 <input type="checkbox"/> 1990 FedEx Service		
FedEx Airline No Credit Card No		
Total Packages	Total Weight	Total Declared Value*
<u>1</u>	<u>43</u>	\$ <u>.00</u>
<small>* Our liability is limited to \$100 unless you declare a higher value. See back for details.</small>		
8 <input type="checkbox"/> Release Signature Sign to authorize delivery without obtaining signature		
<small>By signing you authorize us to deliver this shipment without obtaining a signature and agree to indemnify and hold us harmless from any resulting claims.</small>		
<small>SW 6188 Rev Date 5/98 Part #154813>>D188-08 FedEx PRINTED IN U.S.A.</small>		

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ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

PROJECT REFERENCE Sample Area 1		PROJECT NO. 235018	PROJECT LOCATION (STATE) IL	MATRIX TYPE	REQUIRED ANALYSES		PAGE 1 OF 1	
ST. (LAB) PROJECT MANAGER B. Beattie (Signature)	DR NUMBER 501110	CONTRACT NO.			PCB'S (in 50)	PCB'S (in 50)	STANDARD REPORT DELIVERY	
CLIENT (SITE) PM K. Perry	CLIENT PHONE	CLIENT FAX			SOCX-S (5070C)	SOCX-S (5070C)	DATE DUE	
CLIENT NAME Sohum Inc	CLIENT EMAIL				Testco (50)	Testco (50)	EXPEDITED REPORT DELIVERY (SURCHARGE)	
CLIENT ADDRESS 31. Morris, IL 60453							DATE DUE	
COMPANY CONTRACTING THIS WORK (if applicable):							NUMBER OF COOLERS SUBMITTED PER SHIPMENT:	
SAMPLE DATE		SAMPLE IDENTIFICATION		NUMBER OF CONTAINERS SUBMITTED		REMARKS		
12/11/00	1150	SW-PDC-1S-RMS		X	1 1 1 1 1 2 2 2 2			
279A-76								
12/04-a	Temp Block		X					
RELINQUISHED BY: (SIGNATURE) J Swafford	DATE 12/8/00	TIME 8:45	RELINQUISHED BY: (SIGNATURE) J Swafford	DATE 12/04/00	TIME 1902	RELINQUISHED BY: (SIGNATURE)	DATE	TIME
RECEIVED BY: (SIGNATURE) J Swafford	DATE 12/10/00	TIME 1022	RECEIVED BY: (SIGNATURE) 8187-1379-1911	DATE 12/04/00	TIME 1902	RECEIVED BY: (SIGNATURE)	DATE	TIME
LABORATORY USE ONLY								
RECEIVED FOR LABORATORY BY: (SIGNATURE)	DATE	TIME	CUSTODY INTACT YES NO	CUSTODY SEAL NO.	STL-SL LOG NO.	LABORATORY REMARKS:		

DOCUMENTS HELD SOFT

279A-77

fed USA Airbill Tracking Number 8187 0379 1911

Please print and press hard
Date 02-04-00 Sender's FedEx Account Number 1187-9587-3

Sender's Name Bill Wright Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

City SAINT LOUIS State MO ZIP 63127

Recipient's address or telephone number
st 24 characters will appear on envelope
23548-060-001

Recipient's Name BETSY BEAUBEAUCHAMP Phone (912) 354-7858

Company SAVANNAH LABRATORIES

Address 5102 LAROCHE AVE

HOLD at FedEx location, print FedEx address

City SAVANNAH State GA ZIP 31404

FED EX AIRBILL Hand & Stick FedEx Airbill

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill and in our current Service Guide, including terms that limit our liability.

0124720707

8DA22
0215

4a **Packages up to 150 lbs.**
Delivery commitment may be later in some areas.

FedEx Priority Overnight
Next business morning

FedEx Standard Overnight
Next business afternoon

FedEx First Overnight
Earlier next business morning
Delivery to select locations

Packages over 150 lbs.
Delivery commitment may be later in some areas.

FedEx 1Day Freight*
Next business day

FedEx 2Day Freight
Second business day

FedEx 3Day Freight
Third business day

* Call for Confirmation

5 **SHIPMENT VALUE**
* Declared value limit \$500

FedEx Envelope/Letter*

FedEx Pak*

Other Pkg.
Includes FedEx Box, FedEx Tube, and customer pkg

6 **SHIPMENT SCHEDULE**
SATURDAY Delivery Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes
 SATURDAY Delivery Available for FedEx Priority Overnight to select ZIP codes
to select ZIP codes

SUNDAY Delivery Available for FedEx Priority Overnight to select ZIP codes

HOLD Weekly at FedEx Location

HOLD Saturday at FedEx Location

HOLD Saturday at FedEx Location
Available for FedEx Priority Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

No Yes As per attached Shippers Declaration
Shippers Declaration not required

Yes Shippers Declaration not required

Dry Ice

Dry Ice
Dry Ice & UN 1400

Dangerous Goods cannot be shipped in FedEx packaging

Cargo Aircraft Only

7 **SHIPPING BILL TO:**
Card No. before
 Sender Acct. No. in Section 1 will be billed
 Recipient
 Third Party Credit Card Cash/Check

FedEx Acct. No.
Credit Card No. Exp. Date

Total Packages	Total Weight	Total Declared Value
1	46	\$ 00

Our liability is limited to \$100 unless you declare a higher value. See back for details

8 **NO SIGNATURE** Sign to authorize delivery without obtaining signature

By signing you authorize us to deliver the shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims

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**SL SAVANNAH LABORATORIES
& ENVIRONMENTAL SERVICES, INC**

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD

402 LaFosse Avenue, Savannah, GA 31404
12846 Industrial Plaza Drive, Tallahassee, FL 32301
1900 Lakeside Drive, Mobile, AL 36693
16712 Benjamin Road, Suite 100, Tampa, FL 33634
1100 Alpha Drive, Suite 110, Destrehan, LA 70047

Phone: (912) 354-7858 J12) 352-0165
Phone: (904) 878-3994 Fax: (904) 878-9504
Phone: (334) 666-6633 Fax: (334) 666-6696
Phone: (813) 885-7427 Fax: (813) 885-7040
Phone: (504) 764-1100 Fax: (504) 725-1163

PROJECT REFERENCE <i>Savwest Area 1</i>		PROJECT NO <i>23548</i>	PO. NUMBER <i>Direct R311 to Solution</i>	MATRIX TYPE <i>Homogeneous liquid (747000) Homogeneous solid (747000) Homogeneous liquid (747000) Homogeneous solid (747000)</i>	REQUIRED ANALYSES <i>MERCURY (747000) Hg(100%) 1/11/99 Cyanide (901000) CN(100%) 1/11/99 Fluoride (266000) F(100%) 1/11/99 Sulfate (744600) SO4(100%) 1/11/99 Pb(5000) Pb(100%) 1/11/99 Pesticides (6520) Pesticides (100%) 1/11/99 Mercury (747000) Hg(100%) 1/11/99 Total Phosphorus (50550) P(100%) 1/11/99</i>								PAGE 1 OF 1						
PROJECT LOC. <i>JL</i>	SAMPLER(s) NAME <i>William E. Wright</i>	PHONE FAX	CLIENT NAME <i>Solution Inc</i>		CLIENT PROJECT MANAGER <i>K. Perry</i>									STANDARD REPORT DELIVERY					
CLIENT ADDRESS (CITY, STATE, ZIP) <i>St. Louis, MD</i>										EXPEDITED REPORT DELIVERY (surcharge)									
SAMPLE	SL NO.	SAMPLE IDENTIFICATION <i>Sav-PDC-US-FD</i>								NUMBER OF CONTAINERS SUBMITTED				REMARKS					
DATE <i>220400</i>	TIME <i>1305</i>									1	1	1	2	2	2	2	1		
279A-78																			
220400 — <i>Temp blank</i>																			
RELINQUISHED BY: (SIGNATURE) <i>J. Swafford</i>		DATE <i>1/9/99</i>	TIME <i>12:30</i>	RELINQUISHED BY: (SIGNATURE) <i>William E. Wright</i>		DATE <i>1/9/99</i>	TIME <i>1902</i>	RELINQUISHED BY: (SIGNATURE)		DATE	TIME	RECEIVED BY: (SIGNATURE) <i>FedEx</i>		DATE	TIME				
RECEIVED BY: (SIGNATURE) <i>William E. Wright</i>		DATE <i>1/9/99</i>	TIME <i>1000</i>	RECEIVED BY: (SIGNATURE) <i>8187-0379-1885</i>		DATE <i>1/9/99</i>	TIME <i>1200</i>	RECEIVED BY: (SIGNATURE)		DATE	TIME								
LABORATORY USE ONLY																			
LABORATORY BY: (SIGNATURE)		DATE	TIME	CUSTODY INTACT	CUSTODY SEAL NO.	SL LOG NO.	LABORATORY REMARKS:												
				<input type="checkbox"/> YES	<input type="checkbox"/> NO														

279A-79



Please print and press hard

Date 02-04-00 Sender's FedEx
Account Number 1187-9587-3

Sender's Name Bill Wright Phone (314) 842-4550

Company O'BRIEN & GERE

Address 12250 WEBER HILL RD

SAINT LOUIS **St. Louis** **MO** **ZIP 63127**

Our Internal Billing Reference

23548. 000,00

Recipient's Name **BETSY BEAUBEAUCHAMP** Phone (912) 354-7858

Company SAVANNAH LABORATORIES

Address 5102 LAROCHE AVE

To 2000 feet or higher, the more severe frost is preferred.

Winnipeg Free Press Sunday, April 21, 1990

SAVANNAH **GA** **31404**

Page 10 of 10

NEW PEEL AND STICK FABRICATION

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com
By using this Airbill you agree to the service conditions on the back of this Airbill.

Visit our Web site at www.fedex.com

Packages up to 150 lbs
Delivery commitment may be later in some areas

<input checked="" type="checkbox"/> FedEx 2Day® Second business day	<input type="checkbox"/> FedEx Express Saver® Third business day	* FedEx Environmental Rates not available Minimum charge One pound rate
4b	Packages over 150 lbs	Delivery commitment may be later in some areas
<input type="checkbox"/> FedEx 1Day Freight®	<input type="checkbox"/> FedEx 2Day Freight	<input type="checkbox"/> FedEx 3Day Freight

Call for Confirmation Declared value level **250**

5 FedEx Envelope/Letter* FedEx Pak* Other Pkg*
Includes FedEx Box, FedEx

<input checked="" type="checkbox"/> SATURDAY Delivery	<input type="checkbox"/> SUNDAY Delivery	<input type="checkbox"/> HOLD Weekday	<input type="checkbox"/> HOLD Saturday
Available for FedEx Priority Overnight and FedEx 2Day to select ZIP codes	Available for FedEx Priority Overnight to select ZIP codes	Not available with FedEx First Overnight	Not available with FedEx First Overnight Overnight and FedEx 2D to select ZIP codes
Does this shipment contain dangerous goods?			
<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> Yes As per attached Shipper's Declaration Shipper's Declaration not required			
<input type="checkbox"/> Dry Ice Dry Ice, LN ₂ , LN ₄₅			
<input type="checkbox"/> Cargo Aircraft Only			

Dangerous Goods cannot be shipped in FedEx packages.

Sender Recipient Third Party Credit Card Cash/Check

FedEx Acct No Credit Card No	Exp Date	
Total Packages	Total Weight	Total Declared Value*
<hr/>	47	\$ <hr/> <hr/> 00

FedEx Use Only

8 **Please signiture** *Sign to authority delivery without electronic signature*

By signing you authorize us to deliver this shipment without obtaining a signature, and agree to indemnify and hold us harmless from any resulting claims.

0126730793

fed USA Airbill FedEx
Tracking Number 8170 9423 1624

Please press and press hard
Date 09-01-02 Sender's FedEx Account Number 1187-9587-3

Sender's Name Bill Wright Phone (314) 842-4550

Company O'BRIEN & GERE

Address 5000 CEDAR PLAZA PKWY STE 211

City SAINT LOUIS State MO ZIP 63128

First 20 characters will appear on invoice 23548.030

Recipient's Name FRANK STEVENS Phone (919) 544-5729

Company TRIANGLE LABORTIES

Address 801 CAPITOLA DR

No current delivery to PO boxes or PO ZIP codes

To "HOLD" at FedEx location,
print FedEx address here
City DURHAM State NC ZIP 27713

ENVELOPE AND SLIPCASE ARE USA AIRBILLS

See back for application instructions.

Questions? Call 1-800-Go-FedEx® (800-463-3339)

Visit our Web site at www.fedex.com

By using this Airbill you agree to the service conditions on the back of this Airbill
and in our current Service Guide, including terms that limit our liability.

0119392504

Form
ID No. **0215**

4a FedEx Priority Overnight
Next business morning FedEx Standard Overnight
Next business afternoon FedEx First Overnight
Earliest next business morning
delivery to select locations

 FedEx 2Day*
Second business day FedEx Express Saver*
Third business day FedEx Laser Rate not available
Minimum charge One-pound rate

4b FedEx 1Day Freight*
Next business day FedEx 2Day Freight
Second business day FedEx 3Day Freight
Third business day

* Call for Confirmation Declared value limit \$500

5 FedEx Letter* FedEx Pak* Other Pkg.
Includes FedEx Box, FedEx
Tube, and customer pug

6 Saturday Delivery Sunday Delivery HOLD Weekday
Available for FedEx Priority at FedEx Location HOLD Saturday
Overnight to select ZIP codes Available for FedEx Priority
at FedEx Location HOLD Saturday
Overnight and FedEx 2Day to select locations

Does this shipment contain dangerous goods?

No Yes As per attached
Shippers Declaration Yes Shippers Declaration
not required Dangerous Goods cannot be shipped in FedEx packaging Dry Ice
On ice, 8 UN 1845 Cargo Aircraft Only

7 Sender Recipient Third Party Credit Card Cash/Check
Acct. No. or Section _____ Exp. Date _____
FedEx Acct. No. Credit Card No.

Total Packages	Total Weight	Total Declared Value*
1	<u>52</u>	\$ <u>00</u>
*Our liability is limited to \$100 unless you declare a higher value. See back for details		
FedEx Use Only		

8 Release ✓ Sign as authority delivery without obtaining signature

By signing you authorize us to deliver this shipment without obtaining a signature
and agree to indemnify and hold us harmless from any resulting claims.

RETAIN THIS COPY FOR YOUR RECORDS

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Field Sampling Report, Saugat Area 1
